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ABSTRACT

The first section of this book deals with the concept of education as a developmental tool for the individual and for social institutions. Educational development is perceived as directed towards the problems of poverty and deprivation, social equality, quality of the environment, and participation in political processes. Section Two deals with inservice education as an effective response to the need for changes. In the third section a discussion is presented of innovations in teacher education and national research bases needed for reforms in education. The final section focuses on the importance of a dialogue between higher education and the corporate world. (JD)

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TEACHER EDUCATION 1979

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TEACHER EDUCATION AND NATIONAL DEVELOPMENT

INTERNATIONAL PERSPECTIVES ON THE ROLE OF TEACHER EDUCATION IN NATION BUILDING

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INTERNATIONAL COUNCIL ON EDUCATION FOR TEACHING

INTERNATIONAL COUNCIL ON EDUCATION FOR TEACHING

ICET is an international voluntary agency linking educational organizations, institutions and individuals in a worldwide communications network involving over seventy countries. Founded in England in 1953, the secretariat was moved to Washington in 1968. ICET is the only international organization whose primary objective is the improvement of the quality of the teaching profession and making it more responsive to the development of society. ICET serves, in effect, as the global voice of those concerned with the preparation of teaching personnel. It has official consultative status with UNESCO.

The membership network, including colleges, universities, educational organizations, and individuals, provides a unique source of expertise to assist the world's educational community in providing education for its citizens.

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TEACHER EDUCATION AND NATIONAL DEVELOPMENT

INTERNATIONAL PERSPECTIVES ON THE ROLE OF TEACHER EDUCATION IN NATION BUILDING

Proceedings of the XXVI ICET
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August 6 – 10, 1979

Editors
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From the President's Pen

The XXVI World Assembly of the International Council on Education for Teaching brought to Seoul, Korea, more than 300 delegates, observers, and educational leaders from Asia, Australia, Africa, Europe, and the Americas to focus attention on the theme of the conference, TEACHER EDUCATION AND NATIONAL DEVELOPMENT.

This book includes major addresses and papers given by leaders in education and business from around the world. Plenary session addresses and panel discussions deal with such topics as international perspectives on inservice education, teacher education as an instrument for national development, priorities for research in teacher education, teacher education and the improvement of instruction and innovation in teacher education. A special session for leaders from business and education is concerned with efforts to strengthen the links between business and higher education.

Through its program of World Assemblies and other projects and activities, the International Council on Education for Teaching emphasizes four major goals: (1) to provide an international forum for the discussion and examination of the problems confronting institutions for the preparation of personnel for the education professions, (2) to give support and assistance to institutions engaged in the preparation of educators to become more responsive to human needs, (3) to develop internationally a recognition and understanding of the partnership approach that is essential to a maximum realization of the goal of improvement in the quality of teaching, (4) to encourage and stimulate international cooperation, directed toward improving the quality of preparation of teachers, administrators, and educational specialists.

To achieve these and other goals, ICET was founded in 1933 by a small group of educators meeting in Oxford, England. Whose vision has become a reality during the first 25 years of our existence. ICET is an international voluntary agency linking educational organizations, institutions, and individuals in a worldwide communications and action network involving nations in every continent. ICET is the only international organization whose primary objective is improving the quality of teaching and making teaching more responsive to the development needs of society. ICET serves as the global voice of all these concerned with the involved in the preparation of personnel for the educational tasks of society.

The achievement of our goals demands the full participation and cooperation of all members of the teacher education community.

Paul H. Masoner
President

FOREWORD

The XXVI ICET World Assembly was held in Seoul, Korea, August 6-10, 1979 and focused on the topic, "Teacher Education and National Development." This publication constitutes the Proceedings of this international conference. The term "national development" as used at the conference and in these papers reflects a significant change in the concept of development.

In virtually all countries of the world, a new view of development is displacing that which traditionally concentrated exclusively upon economic production. The new concept includes all aspects of development of the individual and the social institutions which affect him; the social, political, cultural as well as economic. Development is increasingly perceived as directed towards the problems of poverty and deprivation, social equity, quality of the environment, participation in the political process and general enhancement of the quality of life.

The linking of education to national development often calls for extensive and fundamental changes in educational systems and the preparation of teachers. The increasing social demand for education on the part of masses of people means not only quantitative expansion of the teaching corps but attention to qualitative factors as well as new forms and content for the preparation of teaching personnel. These may include the following:

- responding and coping with the complete range of individual differences, (social, cultural, ethnic, mental, physical, motivational, etc.) found in the normal distribution of characteristics of children and youth in a given society,
- preparing to teach out-of-school youths and adults,
- gearing education more closely to the world of work,
- teacher preparation at rising levels of academic preparation,
- incorporation of new subject matter fields and the updating of old ones,
- higher standards for entrance into the profession and raised entry levels,
- the gradual growth of a scientific base for teaching.

These topics and others are dealt with in Section One of the book. Section Two deals with inservice education as an effective response to the need for changes. Inservice education, in the majority of countries of the world, has become a topic of major interest and activity, not only to remedy past inadequacies of pre-service education, but as a new form of career-long learning to keep teachers current with changing affairs. Section Three deals with innovations in teacher education and provides an example of a national research base needed for reforms in education.

Because the process of modernization requires large numbers of persons with advanced training, a dialogue between higher education and the corporate world is imperative. The absence, or dearth of this communication in most countries of the world is a subject of growing concern to both educators and business executives. To address this need, ICET, at each of its annual world assemblies, (held on a different continent each year on a rotating basis,) schedules a seminar on the topic, "Strengthening the Links Between Higher Education and the Corporate World." Section Four deals with this topic as presented at this year's businessmen-educator seminar by the chancellor of a large U.S. university and the president of one of Korea's largest industrial firms.

Howard B. Leavitt
Frank H. Klassen

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Section One:

TRENDS, POLICIES, ISSUES IN TEACHER EDUCATION AND DEVELOPMENT

Section One is introduced by Korea's Minister of Education PAK on improving the quality of education. This is followed by TAYLOR's paper which provides a broad international perspective on categories and stages of development of teacher education institutions in industrializing countries.

Next SINGH's broad perspective on educational development in the Asian countries. TYLER's paper, then focusses upon the improvement of instruction as the central responsibility of teachers in their performance of a basically human service activity. The section closes with Yoo's paper containing a number of caveats for educators who may, too eagerly, seek innovation and change in teacher education.

Improving the Quality of Teaching: Opening Address

CHAN HYUN PAK
Minister of Education
Republic of Korea

It is a distinct pleasure to be able to host, here in Korea, this 26th World Assembly of Teacher Educators. We note with pleasure the scholars of international renown as well as the many others who are doing so much for the cause of teacher education gathered togather here today.

Various conditions have to be met to set the stage for good education. It is necessary to pay careful attention to providing the essential facilities as well as to perfecting the content of education. Naturally it is also imperative not to overlook the need to ensure adequate financial support for the educational process. Nonetheless, among all these conditions, the teachers must be ranked as the most crucial element in the whole equation. Therefore, it would hardly be an exaggeration to assert that the ultimate key to the success or failure of the educational process is the quality of the teachers themselves.

The task of preparing teachers who play a role of this importance within the educational process is primarily the responsibility of the institutions for teacher education to which all of you are devoting your energies. In light of this fact, great significance must be attached to this opportunity to engage in a dialogue with you.

Actually, educational capacity is understood to be such a key factor in national development that, these days, "teacher education and national development" has become a major topic of discussion. Hence, there can be no doubt about the timeliness of this opportunity to focus on the development of teacher education.

As I am sure all of you know, the traditional approach to education involved having a small number of highly qualified teachers instruct the children of a privileged class. While the content of this education was more or less fixed, it was possible to make adjustments to individual capabilities. However the educational conditions developing in the schools today are difficult to handle by means of this traditional approach to education. Not only has the school population drastically increased but even the goals and content of education have been greatly modified. As a result of the expansion of the scale of education, schools can no longer function on the basis of the traditional kind of teacher. Therefore, a small core of elite teachers is no longer sufficient to cope with the situation. Institutions specifically oriented to teacher training have been established in response to these changing conditions in the field of education.

The training of teachers in these institutions for teacher education has been shifted toward a quantitative approach in response to the expansion of educational opportunities in society at large. As a result, the social standing of teachers and, of course, their quality have both become endangered.

These outcomes are, in fact, two aspects of one problem and it is crystal clear that this problem must be considered the focal concern for the development of teacher education under present circumstances. That is, there is a pressing need both to elevate the social standing of teachers and to improve their quality. The government must play the chief role in dealing with the former aspect while the institutions for teacher education must assume primary responsibility for the latter.

Among the things which the government must do related to improving the social standing of teachers, I believe the most important of all are to improve the economic position of teachers and to establish a teacher certification system capable of eliciting greater public confidence in the qualifications of those engaged in the teaching profession.

Specifically, in these days when it has come to be widely recognized that educational capacity determines the fate of a nation and provides the dynamism needed to promote national development, it is as clear as daylight that the highest priority must be given to carrying out the government's policies on teacher education because of its pivotal role in the development of the overall educational potential of the nation.

On the other hand, the most important issue in the execution of the programs established in the various institutions for teacher education is to ensure that the maximum efforts are made to elevate the quality of teachers.

Afterall, elevating the quality of teachers is the essential first step toward ensuring that teachers will receive the desired kind of social recognition for their services. Likewise, turning out teachers who are uniformly of a high calibre will result in an elevation of their social standing as well as an increase in their sense of esteem.

The focal issues entailed in the efforts to improve the qualitative level of the teaching profession can initially be conceptualized in terms of two aspects. One is the strengthening of the system of recruiting students for the institutions for teacher education; and the other is the search for ways to rationalize the curriculum of these institutions. In order to do a good job of educating teachers, the first imperative is to attract superior aspirants. Only after this comes the other essential considerations such as the need to have good training programs and to find means of inducing those who have been trained to make a lifetime commitment to teaching. From this point of view, the most urgent task is to strengthen the system for attracting superior persons to the teaching profession.

Turning to the problem of establishing a rational curriculum for teacher education, here the most essential thing is to have the people concerned get together and discuss the issues involved. That is, there must be close consultation between the educators dealing with the educational process as it is carried on in the schools and the educational specialists who deal specifically with the formulation of the curriculum. There must also be regular and

continuing exchanges between the college professors who focus on the theoretical aspects of education and the teachers who actually implement these theories in the classrooms. Through communication of this kind, the type of educational content desired in an authentic, modern society can come to be reflected in the curriculum of the institutions for teacher education. Moreover, this communication process should not be limited to the boundaries of any one country but must be carried on unceasingly from a worldwide point of view.

Esteemed foreign and domestic specialists in teacher education, I am fully confident that the many exchanges on the topic of teacher education you will be involved in during this international conference will raise bright hopes and enhance the prospects for the development of teacher education all around the world. Furthermore I feel certain that this conference will provide an opportunity for making real strides in the efforts to prepare highly qualified teachers who will merit the social esteem which is their due.

Finally, I would like once again to express my sincere gratitude to the schoolars from abroad and at home who will deliver addresses during this conference. My special thanks also goes to the members of the preparatory commission for this conference and the administrative personnel of the Korean Teacher Education Council all of whom worked very hard to prepare for this occasion.

Teacher Education in Industrializing Countries

WILLIAM TAYLOR
Director of the University of London Institute of Education

Two Vignettes

John Smith is white, 23 years old and lives in a country with a *per capita* GNP equivalent to $ US10,000. He completed 13 years of pre-primary, elementary and secondary schooling before entering university five years ago at the age of eighteen. He took his Bachelor of Arts degree twelve months ago, majoring in English and Education, and obtained high grades. He is currently pursuing a twelve month programme in the professional aspects of education practice.

During two-thirds of his course he studies in college, spending four days each week in the lecture room and teaching laboratory, and the other day working in a neighbouring school with a small group of fellow students under a supervising teacher and a professor who himself taught ten years before obtaining his Doctoral degree for research on children's classroom behaviour.

During the remaining third of the course John teaches classes in an ordinary school, again with the help of a teacher who has been trained in supervisory techniques. He is visited regularly by his college professors, who videotape his lessons using portable equipment they carry with them for this purpose. These lessons are analysed and reviewed during the one day per week that he spends back in college during these block teaching periods.

In preparing his teaching material John has access to a resources collection that includes 35mm film, slides and filmstrips, audio and video tapes, charts, booklets, pamphlets and hard copy editions, OHP transparencies, prepared work sheets, teaching machine programmes and a variety of recently introduced electronic devices. He also makes frequent use of a library that contains a quarter of a million volumes on education, and which annually acquires some two thousand serials. In preparing bibliographies for his essays and projects he employs computer search facilities linked with ERIC and some ninety other data bases in Europe and the United States.

When in a short while John begins actively to seek employment (which he confidently expects to obtain) in the school system he will utilise a telephone-linked computerised job information and vocational advice service provided through the Post Office computer. In his first post he will teach for only four days each week for the first year, and will be enrolled in a systematic induction programme linked to his initial training. As part of this induction sequence he will engage in micro-teaching, classroom simulation,

curriculum and lesson analysis, the trial and evaluation of innovatively assessment techniques, and basic school administration.

While John is still committed to his chosen career in teaching, he has found some of the classes that he takes during periods of block practice unreceptive, and that a disturbing rate of truancy exists among older pupils. He finds some of the educational ideas that he is asked to study, somewhat irrelevant to the tasks he feels he will be called upon to undertake as a qualified teacher. However, he is interested in the psychology of child development and in the work of those thinkers who are highly critical of the social and educational systems that for a long time he has himself taken for granted. He would like in due course to obtain a position as a Head of Department or a Principal.

John Fulani is eighteen years old, and is completing his training in one of the three primary training colleges located in the capital of his country, which has a GNP of about US $300 per head. He started school in a village three hundred miles from the capital at the age of seven and progressed rapidly with only one repeat to the age of fifteen. He learned to write on a slate and to read from one of the twenty-five books which were all the village school had for its two hundred pupils. At fifteen, having failed to win one of the few places offered in the region's secondary school, he applied for entry to the training college, where he has continued to study the whole range of primary school subjects, largely by means of notes dictated to him in a language that is not his mother tongue and different from the one used as medium of instruction in the primary school. If he is successful in the final examination, he will obtain his Grade C Certificate and is likely to be appointed as the only qualified and paid teacher in a village similar to that in which he was brought up. The college library has a limited number of books, but is woefully short of recent editions and takes very few journals. A good deal of lecture time is spent on those official school texts that have so far appeared as a result of a UNESCO sponsored programme of curriculum renewal in his country that began three years ago.

John's brother, who qualified six years ago and is teaching in a provincial town, warned in his last letter against paying too much attention to the ideas of the college lecturers. He listed some of the shortcomings of his own school, such as the almost complete absence of books and the radio set that has been out of operation since just after the last visit of the technician four months ago. Even when working it is often useless because of frequent unavailability of batteries. A supervisor from the education office in the provincial capital came some months ago to offer advice and took away a list of orders for books and equipment; neither supervisor or orders have been heard of since. Meanwhile, John's brother has applied to the Ministry for transfer to a larger school, and also for an upgrading course on the university. Again he has heard nothing. He continues to cope with pupils who for most part the eager to learn, and especially eager to qualify for one of the very limited number of places available in the regional secondary school. He cooperates as best he can with the town community, whose help he tries to enlist in reducing the very high rate of drop-out in his school, especially among the girls; less than half

his pupils complete their primary education.

In the face of the very slow progress that his country is making in universalising primary schooling, John has of late begun to wonder if any real change will take place in his lifetime without a radical transformation of the political and economic structure. Such ideas have become a frequent theme of discussion among fellow students.

Defining the Issues

Having begun by emphasising the contrasts between teacher education in some parts of the developed, industrialised world, and in some of the developing, industrialising world, let me quickly draw back. In the problems that developed world and third world educators face there are many similarities, many continua. I cannot in this paper do justice to the implications for teacher education of theories such as those of Horton, who argues that there are basic differences in modes of thought between Western and non-Western societies, between 'traditional' and 'modern', 'pre-scientific' and 'science-oriented', literate and non-literate, industrial and non-industrial, developed and developing. (Elkana 1977). On issues such as teacher supply (in respect of which Williams (1977) has traced some significant parallels between recent experience in England and Wales and in Ghana); the organisation of training institutions and the structure of courses; methods of instruction; criteria of effectiveness; modes of evaluation and assessment, and the socialisation and motivation of future teachers, we find common ground that reflects not the relics of colonialisation, or the cultural hegemony of the West, but similarities in tasks that have to be performed. But before examining some recent trends in teacher education in the developed and developing world, let me look a little more closely at the relationship implied by the title of this paper.

If I wanted to phrase an examination question based on my title, I suppose that I would end up with something like this. *'How far and in what ways can the structure of teacher education in a less developed country (LDC), and the curriculum, pedagogy and methods of assessment employed in its teacher education institutions contribute to the process of industrialisation within the context of specific social, economic and political goals?'*

I am glad I do not have to answer that question, for the state of our present and likely future knowledge about the relations between education, economy and society does not enable a really satisfactory answer to be produced. Most obviously, LDC's are not all of a piece. There are sharp contrasts, not only in per capita GNP, but also in relative rates of economic growth, in the distribution of wealth and in types of productive activities, all of which may be relevant to assessing the contribution that teacher education might make to industrialisation.

Other difficulties in making generalisations about the relation of teacher education to industrialisation have to do not so much with differences between and within LDCs, but with the fact that even in the industrialised world, we do not yet fully understand, and certainly are not in a position to

control, the ways in which the skills, knowledge, dispositions and motivations that teachers acquire as a result of their education and training subsequently influence the cognitive and moral development of pupils and the success and failure of educational policies. In considering the relevance of developed world experience in teacher education to the problems of the LDCs, we are not simply dealing with problems of 'teachnology transfer'. There *is* no uncontested technology of teacher education, even in those countries such as the United States which have devoted enormous sums to research and development in this field. There is no one best way.

But there is a more fundamental reason why a really comprehensive, overall answer is impossible. In the words of Arnold Anderson (1976)

> "The more useful an education system becomes to its ambient society, the more manifold become its linkages to other aspects of social change. Accordingly it becomes progressively more diffiuclt to make useful judgements about congruence between particular programmes and desired outcomes...."

This does not mean that nothing can be said. It does mean that specific cause-effect relationships will be difficult to identify, and that the connections between what happens in the course of initial and in-service teacher training and the progress of a particular programme of industrialisation are likely to be tenuous and indirect. Teacher education serves more than economic imperatives. But about one thing there can be no doubt. An adequate supply of teachers is essential to the provision of primary and secondary education. And such provision plays an important if as yet not fully understood part in facilitating economic take-off and, even more certainly, in sustaining higher levels of industrial activity.

The chief form of pollution in many LDCs is poverty, rather than those more fashionable forms to which the attention of the Western intellectual has lately been turned. Despite the charm that the simple life may have for the inhabitant of West Coast USA or Greenwich Village or Hampstead (provided, that is, there is a first class hospital equipped with all the latest medical technology not too far away), few LDCs can afford to be committed other than to some form of economic growth. Given that world peace depends on finding a basis of accommodation between north and south, the haves and have-nots, none of us can afford to ignore the contribution, however slight, that improved patterns of teacher education might make to the success of each country's policy in the field of industrialisation, modernisation and development.

A ratio of per capita national incomes in the order of 100 to 1, and a sense on the part of many developing countries that whilst dependance on fluctuations of economic fortune in the developed world makes their position in some respects little different from that of colonial days, they do control certain scarce resources vital to the continued viability of the highly industrialised countries, lies behind many of todays newspaper headlines. Something like half the world's population is to be found in countries with a per capita income of less than 300 US dollars per person.

It is in this context that the United Nations adopted the principles of

the "New Economic Order"; in which negotiations go on about the price of oil; in which arguments take place in international organisations and within individual countries about the magnitude, significance and consequences of 'foreign aid', and in which finance ministers, economists and administrators in capitalist and socialist countries alike struggle to maintain viable monetary systems and patterns of international trade. We should be surprised not by their occasional breakdown, but by the fact that in a world of such complexity, such systems work at all.

There is an understandable impatience in many LDS, a pressure to ignore the mental footnotes and the small print, to get straight to the core of what is known about teacher preparation and to institutionalise this in the shortest possible time. It is important for those of us in the developed world to emphosise the modesty of our knowledge in this fleld, to stress that a simple technology transfer even if it is desired, is impracticable, that many of the techniques and approaches we emply remain problematic.

But it is unhelpful to believe that there is nothing we can learn from each other, that the variables are so complex, the values so contested, that there is nothing useful to be said. People do in fact adopt this position, even in some of the industrialised countries themselves. Many of us at this conference who work in teacher education will have had to endure from academic colleagues and practitioners alike, comments to the effect that professional teacher education is virtually a waste of time and all that matters is that a teacher knows his subject and is keen to put it across. Those things do matter a great deal. But even on a modest assessment of what has been accomplished in the study and teaching of professional practice, we can reasonably claim that there are identifiable perceptual and executive skills, appreciative frameworks, sensitivities, forms of knowledge and dispositions highly relevant to success in teaching and learning, and capable of being acquired through the medium of a good professional training.

Categorising and Comparing Teacher Education Structures

Although it cannot do justice to the great variety of arrangements to be found in different countries, a simple five-fold categorisation of existing arrangements for teacher education may be useful in structuring our subsequent discussion. I want to label these four levels *Normal School A, Normal School B, College, University* (Taylor 1974), and *Alternative programmes.*

The defining characteristic of teacher education at the *Normal School A* level is that students enter prior to the usual age of completion of secondary education. Sometimes, such 'training' is end-on to primary schooling (which can, of course, terminate at almost any age from 12 to the mid 20's). This level differs from the next in that entrants are recruited *prior* to achieving the age of 16, and well before the end of what in a developed country would be regarded as the secondary stage of schooling. The intention is to provide teachers for primary schools, and there is a strong emphasis on the subjects of the primary curriculum. Classes tend to be large, methods to be formal.

There is little time available for studying teaching methods, and evenless for the consideration of educational principles.

What I shall call the *Normal School B* level of training again begins prior to students having completed what elsewhere might be regarded as a full secondary education, but usually *at* or *after* the age of sixteen. Entry is often on the basis of performance in the 'first certificate' examination, equivalent in English terms to the Ordinary level of the General Certificate of Education (GCE). The stress is again upon the subjects of the primary curriculum, although the training is not as limited as in the case of *Normal School A*, and there is more scope for the discussion of teaching methods and for a certain amount of psychological, historical and even philosophical and social content.

The *College* level of training begins on successful completion of a full secondary education, usually at age eighteen. In some countries where there is a long-standing shortage of teachers, but where it has been found possible or desirable to insist that entrants to teaching have successfully completed secondary education, the teacher education programme can be very short, as little one year. Elsewhere - even in developed countries as fast as preparation of teachers for young children has been concerned - the concurrent course of personal education and professional training lasts from two to four years, and typically results in the certification of the 'graduate' to work in schools catering for children up to the age of eleven or just beyond.

The variety of arrangements at what I shall call *University* level training is again very great, taking in both *consecutive* (degree plus teaching qualifications) and *concurrent* (personal and professional education pursued in parallel, with various degrees of conceptual and methodological integration) modes. Inevitably, this is an expensive way of preparing teachers, involving between ten and twelve years of secondary and post-secondary education and training, and is possible only in the wealthiest countries. Elsewhere, it is variants of the first and second level of training, Normal School A and Normal School B that predominate. Quite often, especially in those countries where opportunity for any kind of secondary education is restricted, training as a teacher represents the only way in which an able boy or girl can continue education beyond the primary stage.

Alternative programmes include a variety of efforts to get away from full-time, residential initial teacher education in favour of 'sandwich' arrangements in which periods of study alternatve with periods of school based training, or there is a heavy reliance upon distance learning techniques, or which are based upon ideas that have been developed mainly in connection with 'non-formal' education. For example, in Tanzania, a school-based emergency training programme has over the past three years enrolled some 40,000 trainees, who undertake half-time teaching responsibilities in a local school, are supervised and taught by headmasters and adult education 'co-ordinators', pursue correspondence courses linked with radio broadcasts, spend short residential periods in teachers colleges and at the end of this three year 'apprenticeship' spend one month in college, following which those who are successful are given full qualified teacher status. (Vivian 1979) It is

intended that this crash programme should be of short discussion, being phased out in the early '80s. Teacher training after that date will take place through reformed college-based courses comprising a first year of national service in which educational issues will be studied, a second year in college and a one year school based programme involving correspondence tuition.

Whilst it is clear that not all the aspects of the Tanzanian emergency teacher-training programme have been equally successful, an overriding consideration is the extent to which it has made possible an increase in primary enrolments, from only 50% in 1974 to over 90% in 1979. It is difficult to avoid the conclusion that dramatic improvements in primary and basic education are in many countries dependent upon the implementation of teacher training programmes radically different in organisation and content from those which developed country teacher educators might regard as appropriate.

Attagara (1973) describes a programme for the preparation of rural teachers in Thailand that incorporates 'alternative' elements into a residential course of 'Normal School B' type. The core of this course is the student teaching experience.

> "(Students) are divided up into groups of about 5-10, and each group is assigned to a certain village. They stay in the village in a 'student hostel' either built free for them by the villagers or rented by the institution concerned. They pay for their own meals and run this house and its yard as a 'model home' to the villagers. They usually teach between half a day and three fourths of a day to gain teaching experience and devote the rest of the day to school and community improvement" (p. 102)

To over-simplify, we can typify teacher education in a Western industrialised country as a lengthy, expensive, individually oriented, high technology based, post-secondary experience, informed by pluralistic/electric values and designed to prepare age group and subject-specific teachers for work in a capital intensive urban society.

In contrast, teacher education in many developing countries is a short, inexpensive, community oriented, low and intermediate technology based, post-primary programme, informed by national and ideological values, for work in a largely rural and labour intensive society.

Whilst in both cases we must be careful to relatve the goals professed by politicians, policy makers and planners to the actual evidence of what is happening in the society concerned, there are at the level of expressed intention sharp differences in the current focus of educational interest in developed and third world countries. In the former, with universal primary education long since achieved, with a minium school leaving age of sixteen and an increasing proportion of pupils remaining at school until eighteen, the debate is about moves from elite to mass to universal post-compulsory and post-secondary education, the costs and benefits of such provision for the individual and for society and the extent to which a more equitable distribution of educational resources can be achieved.

During the '50s and '60s there was a parallel concern with secondary and higher education in the third world, in part reflecting residual educational

effects from the colonial period, in part serving a model of the relationship of education and economy based upon relatively cheap capital, abundant natural resources, a concentration upon urban development and a failure to recognise the political and social problems of large scale under and unemployment. The '70s have seen an effort in many countries to put a brake on such trends and even to reverse them. Indeed, the emphasis being given to universalising primary education or providing some kind of basic education (on a definition of which there is at present little apparent agreement) is in some cases starving secondary and higher education of resources needed to ensure a balanced development.

Weiler (1978) emphasises that the "more or less benign *intellectual* neglect of primary education and of the nature of the educational programs it delivers" is one of the factors that stands in the way of an effective re-think of the organisation and content of a primary education appropriate to the circumstances of an industrialising world.

> ".....a major task remains to be done in defining and developing the substance of a first-level or basic education effort that is not just an expanded version of the kind of primary education most developing countries have carried over from colonial days". (p. 183)

The extent to which progress towards the universalisation of primary education is being achieved in the Common-wealth has recently been surveyed by Smith (1979). He shows that the general concept of 'universalisation' conceals a great variety of practice, along dimensions such as the following:-

1. Evolutionary development or data-specific planning.
2. Voluntary or compulsory attendance.
3. Free of cost or fee-charging.
4. School-based or 'non-formal'.
5. Open entry or age specific.
6. Dependent upon initiatives from the local community or sponsored by central or regional government.
7. In the framework of an inclusive state system or alongside 'unofficial' (e.g. Koranic) schools.

Whilst enrollment figures must be treated with caution, being subject for a variety of reasons to gross inflation, substantial progress towards universalisation has been made within the last decade in a number of third world countries. An essential factor in such progress has been the education and training of very large numbers of new teachers, sometimes by means of courses that in length, content, status and aspiration are considerably 'inferior' to those which the countries concerned inherited from the earlier period.

I cannot in this paper attempt to do justice to the controversies that have surrounded discussion of the part that non-formal means might play in improving educational provision in the third world. For some, the best hope of educational advance lies in this direction. At the end of the '60s, Philip Coombs (1968) argued that

> "The poorer countries now face a priority task of non-formal edu-

> cation which years age confronted today's industrialized countries. It is to bring to the vast number of farmers, workers, small entrepreneurs, and others who have never seen the inside of a formal classroom - and perhaps never will - a spate of useful skills and knowledge that they can promptly apply to their own and their nation's development." (p. 142)

In some places, non-formal education has acquired ideological overtones, identified with a rejection of capitalist, entrepreneurial, large scale, urbanised and credential-conscious values and priorities. The more radical versions of this approach virtually reject the possibility of reforming the formal system of schooling, and recommend policies that bypass organised educational provision. "For many of the advocates of non-formal education, it seems (the formal system) just has to be accepted as an irrelevance or an unavoidable evil". (Dore 1976)

The 'bottom-up' implementation of non-formal learning systems is associated with a re-focusing of educational goals on rural development, and away from growth in the modern sector. As usual in such matters, the motives of advocates are mixed; for some, development in the rural hinterland is a precondition for technological and economic take off in the towns; for others, it constitutes a preferred alternative to the style of life that the successful creation of a viable modern sector implies. Supporters of the first of these positions see non-formal education as playing an important part in supporting an existing or reformed pattern of schooling. Harbison (1973) makes the linkages as follows:—

> "First, (non-formal education) provides a wide range of learning services which lie beyond the scope of formal education . . . Second, non-formal training and education may be an alternative or substitute for formal education . . . Third, non-formal education is a means of extending skills and knowledge gained in formal education . . . Fourth, non-formal education in many countries may be the only available learning opportunity for large proportions of the population . . . Fifth, non-formal education may be the one means of counterbalancing some of the distortion created by formal education . . . Achievement oriented, non-formal education may provide the means for growing numbers of competent 'uncredentialled' people to higher level jobs in the economy.

Alongside formal and non-formal education, Harbison (1975) has suggested a third category of learning activities, namely "work-oriented skill and knowledge development", which takes place 'routinely and often unconsciously through learning-by-doing, instruction or inspiration from others, association with peers or fellow workers, or simply participating in a working environment".

The relative priority that governments attach to formal provision, non-formal education and work-oriented skill and knowledge development varies according to the broader educational and social goals of the societies concerned. Not all such choices are effective in achieving the goals that they profess to serve. For example, a heavy emphasis on non-formal provision, fuelled by notions of equity and rural development, may have a stultifying effect upon social mobility and deny to many young people the credentials

and consequential job opportunities that may be the key to breaking down traditional status barriers. Awareness of this and other problems that arise from an excessive concentration upon non-formal policies has caused most countries to develop what Weiler (1978) calls a "hybrid program" which seeks to maximise the strength of both formal and non-formal approaches. Such policies have important applications for the content and organisation of teacher education. They suggest that teachers should be equipped to operate in both sectors, to be sensitive to differences in the learning and teaching styles appropriate in primary schools and in work with young workers and adult citizens. In so far as initial training and in service programmes of restricted length and scope permit, teachers need to be encouraged to identify and seek out those features of their natural and social environment that can contribute to improved schooling and a richer variety of non-formal learning opportunities. Simulations based upon settings of a kind within which teachers are most likely to work and to the content of which the trainees themselves contribute can be a useful way of enhancing sensitivity to environmental stimulants and multipliers. A problem and issue focused programme is likely to be more effective in this respect than one based upon traditional educational disciplines, although the effort needed to produce 'software' that is faithful to research findings in the fields of knowledge upon which it draws should not be underestimated.

In countries where traditional attitudes and ways of life constitute barriers to achieving an appropriate balance between economic modernisation and the integrity of an indigenous culture, teachers need to know something – however basic their own training – about the modification of attitudes through the combination of information inputs and participative group discussion. In this, as in so many other respects, those who determine teacher education policies tread a narrow path between giving teaching a status and dignity that on the one hand may separate the teacher from the community he serves and encourage him to seek promotion outside the classroom and the village, yet on the other hand is needed to ensure that the teacher commands adequate standing and prestige to perform a leadership role.

The existence of large pools of the educated unemployed in some third world countries is in part due to refusal to accept employment below the expectations generated by educational experience. In this respect, it is interesting to note the contrast between employment rates of the educated and less well educated in, for example, some Asian countries, (such as Indonesia and India) where low levels of education are associated with high rates of employment, and in Europe and the United States, where university graduates are still largely insulated from the effects of economic recession and technological change on job opportunities. Mehta (1976) quotes the results of a 1962 Malayan survey which showed that: –

> "the incidence of unemployment was lowest for males and females with no education or only primary education, next lowest for the top group (persons with school certificate or higher school certificate) and the highest for the intermediary group." (p 70)

Analyses of personal earnings in some developing countries show that the

rates of return to education for those in employment are greater for elementary than for secondary and tertiary education, a finding that leads Blaug (1976) to conclude in the case of Thailand that "too much is being spent on higher education and too little on elementary education; at the secondary level, too much is being spent on vocational schools and too little on academic schools". (p 282)

Trends in the Developed World

It may be helpful at this stage to identify some of the recent changes and current trends that characterise teacher education in the *developed* world in order to ascertain which if any of these trends are relevant to the processes of modernisation and industrialisation in developing countries.

First, in terms of my typology, the trend is towards teacher education and training being undertaken at college and university level, with an increasing number of education students studying in 'diversified' institutions alongisde those preparing for other occupations and professions. Changes along these lines took place a long time ago in the United States. They have occurred within the last seven years in England and Wales, where the single purpose teachers' college will have virtually disappeared by the beginning of the 'eighties. In the Federal Republic of Germany, while some single purpose teachers' college will have virtually disappeared by the beginning of the 'eighties. In the Federal Republic of Germany, while some single purpose institutions still exist, they have been given university status. In Australia, teachers colleges were re-named Colleges of Advanced Education, and are in process of diversifying their work. The trend towards the disappearance of teacher education as a separately identifiable sector of post secondary provision is not universal, but is becoming widespread.

Second, one of the factors that has played a part in this process has been the disappearance of the chronic teacher shortage that plagued many school systems for the quarter century after 1945. Where specific certification is required for employment as a teacher, governments have attempted to match the supply of the newly qualified to employment opportunities, wastage rates, and re-entrants from the pool of already qualified teachers. Diminished birth rates in many countries and a slowing down in the takeup of pre-compulsory and post-compulsory education need have no *necessary* consequences for teacher supply, since class sizes can be adjusted accordingly. But in practice few countries are able to afford the resources to improve pupil teacher ratios to an extent necessary to maintain previous levels of output from the training institutions, and 'historic' staffing levels have considerable influence on policy determination.

The effects of economic recession, a higher level of participation by women in the labour force and the deferral of marriage and child bearing have all helped to reduce wastage, and with it turnover and opportunities for rapid promotion. Thus the teaching force is tending to become older, more stable and less mobile. Whilst the proportion of women employed in teach-

ing, especially in work with younger children, remains generally high, there has been some penetration by males into primary work, and an attempt in some countries (in certain cases by legislation) to increase the proportion of women employed in administrative, supervisory and other higher-status positions.

Third, in common with a continuing (if often adversely commented upon) trend towards credentialled professionalism, and because of a recognition of the relatively low levels of education and achievement of many teachers recruited during a period of chronic shortage, the requirements of entry to training have been raised, courses have been lengthened and graduation requirements up-graded. The diversification of higher education that has been going on since the mid-'sixties, with larger numbers of non-university institutions achieving degree (or its equivalent) – granting status, has provided a vehicle for an enhancement in the status and requirements of initial teaching qualifications. It has been argued that to acquire the knowledge and skills that the contemporary teacher needs, a course of at least four years duration after the successful conclusion of secondary schooling is required, and this is increasingly becoming the norm in North America, Europe, Australia and New Zealand. One of the effects of these changes has been to close the gap that has hitherto separated primary and secondary teaching. In most countries, secondary teachers have a higher level of reward, more opportunities for promotion both inside and beyond the school, and a higher public status than teachers of younger children. Nonetheless, once sharp disparties are now in process of being eroded by the upgrading of primary preparation and the diversification of higher education structures.

Fourth, the plurality of political and social ideas and of intellectual frameworks that characterise multiparty parliamentary societies, the effects of which have been heightened by the mass media and cheap reprographic, coupled with the increase in intellectual production from a larger number of academic institutions supported by large scale research funding, have massively increased the range of theories, perspectives and approaches that have implications for the curriculum, pedagogy and assessment of courses of teacher preparation. Some of these have more or less explicit curricula connotations. For example, behaviourist ideas have been strongly influential in the Performance Based Teacher Education movement in the United States, just as the 'progressive' practices that features strongly in the work of the better English primary schools owe much to individualist, personalist and literary-romantic formulations of earlier decades (Taylor 1969). Thus the problem of constructing a valid curriculum, which takes account of the whole range of research relevant to the improvement of teacher education has become an even more difficult task than before. The problems of information overload and cognitive management characteristic of this situation can directly or indirectly encourage the adoption of over-simplified appreciative frameworks (such as a vulgar Marxism) and a rationalising impulse which seeks to reduce uncertainty by the determination and even enforcement of a 'common core' curriculum.

Fifth, there are changes in the role of teacher. For several decades teacher

tasks seemed subject to continuous enlargement, taking in welfare and health responsibilities and parental and community liaison functions as well as a concern for all aspects of student development – cognitive, affective and interpersonal. Such a stress was more common in the United States and in England than in some European countries, but it featured strongly in the rhetoric of teacher preparation in many places. A growing recognition that rhetoric and reality did not match, that excessive demands on the time and attention of teachers were eroding their commitment and capacity in respect of cognitive achievement, has recently led to a tendency to play down a wider role, at least as far as personal and social development are concerned. On the other hand, there is a new stress in some countries on the teacher as a moral and political agent, on the part that the profession can play in the socialisation of the young and the strengthening of values and dispositions consistent with active participation in the life of a democratic society.

A sixth point concerns the curriculum of teacher education. Whilst to those directly concerned, it never seems to remain the same from one year to the next, to the outside observer the overall structure and content may seem to have remained much the same for a very long time. Perhaps the most important dimension is whether professional training is consecutive or concurrent. In the former case, the professional elements – theory of education and practical work in schools – are undertaken separately from the advanced study of the subject or subjects that will later be taught in schools. Where the course is concurrent, subject study, education and professional practice are pursued alongside one another, although still in many cases without really substantial conceptual and methodological integration. But whether concurrent or consecutive, of two three or four years duration, pursued in a single purpose teachers college or in a university, the three basic elements of (a) subject study (b) principles and theory of education and (c) practical teaching in schools, remain distinguishable in terms of timetable, literature, faculty involvement and institutional organisation. Yet major changes *have* taken place in curriculum, pedagogy and methods of assessment.

It is usually only a minority of teachers, mainly those preparing for specialised work at the top of the secondary school, who have opportunities to acquire their subject knowledge under men and women who have themselves made or are continuing to make major contributions to scholarship in their respective fields. Members and fellows of the most prestigious scientific and academic bodies are on the whole not prominently represented in the ranks of those who educate and train teachers. This means that advances in knowledge sometimes take longer to work through to teacher preparation programmes than to other courses at post-secondary level. This 'academic lag' is less when teacher educators have a defined research function and teaching loads which allow time for private study and reflection, when opportunities for enrollment in higher degree and research programmes exist and when there are a large number of voluntary subject associations with memberships that span the whole range from those who labour at the

frontiers of knowledge to those who work in the classrooms of a country's schools. By such formal and informal means, academic lag is reduced and the rate of content innovation in school curricular is increased. All this is helped when institutions exist for the conscious promotion of curriculum renewal and for the dissemination of teaching materials to the schools.

At the risk of over simplification, it can be suggested that as far as English speaking countries are concerned the element of teacher preparation that is commonly spoken of as the 'Education Course' has passed through three separate stages. (In the Francophone world, 'pedagogy' has a rather different content and scope from 'Education' in the English speaking world.) During the period up to about 1960 the disciplinary basis of the course for primary or lower secondary teachers was mainly historical and psychological, with a focus on child development. The conceptual and methodological strands that entered into such courses were not well articulated or adequately differentiated. The result was what Peters called a "mush" rather than a "mesh".

The recruitment to expanding teacher training institutions of men and women who had acquired post-war qualifications in the social sciences or had undertaken post-graduate study in these fields produced a tendency for the elements of the Education course to be separately organised and taught as history of education, philosophy of education, sociology of education, educational psychology and child development. This stiffened the professional aspect of the course, but as the amount of new knowledge generated within each subject grew, so did the problems of selecting appropriate and relevant content. Students and practicing teachers did not always agree with teacher educators that the selections made were those most appropriate to the development of professional understanding and expertise.

As a result of these pressures, and the demands for inclusion within the education course of elements from inter-disciplinary fields of enquiry, such as comparative education and educational administration, there has within the last few years been a move towards 'problem-centred' courses, which bring a variety of disciplinary approaches to bear on a single issue, such as school organisation, the structure of the curriculum, multi-racial education, accountability and participation. But here too, criticisms are being heard. Where such courses have been organised on an elective basis, it is claimed that students can qualify for work in the classroom without having had any systematic preparation in e.g. assessment procedures, the diagnosis of learning difficulties or the historical background of their own system. Debate on these matters can be expected to continue for a long time to come, given that the likelihood of agreement on a 'common core' of concepts, skills and methodologies that should feature in all programmes of teacher preparation will be difficult to achieve and, especially in those countries with decentralised systems of administration and certification, even more difficult to implement.

Seventh, an aspect of recent development in teacher education that is common to many countries is a stress upon what teachers continue to learn after initial certification. This is described variously as continuing education,

in-service education and professional development. The sources of such emphasis are not far to seek. With smaller annual intakes of new teachers, any changes that are to be brought about in professional practice must be undertaken by those already in service. The ubiquity of change in the schools requires a flexible response on the part of serving teachers. Doubts about the success of 'rational curriculum planning' in the sixties has led curriculum reformers to devote more attention to changing the attitudes and practices of teachers in classrooms. Resources are freed by falling rolls that can be used for upgrading an under educated profession. For all these reasons, post-experience teacher training is in many countries currently enjoying a boom.

With all this has gone a willingness to look at the stages that make up the total sequence of professional training in the context of lifelong education. I have elsewhere designated these stages as recruitment, selection, pre-service education and training, induction, in-service refreshment, preparation for specialised roles, career development and preparation for retirement (Taylor 1978). Hitherto the lion's share of attention has been given to the third of these, pre-service education and training. It is this aspect on which most of the research has been done, most of the monographs written and most advice produced. For many years, at least in some countries, selection has been nominal. All those qualified candidates who wished to teach have been able to find a place somewhere. This is now changing, and there is renewed interest in effective ways of identifying applicants who will succeed both in their training course and during their subsequent teaching careers.

Eighth, professional training is now being urged for teachers other than in primary and secondary schools. Until quite recently in many developed countries the possession of a university degree conferred a 'licence to teach'. Professional training as such was unnecessary in order to obtain an appointment in a state secondary school. Within recent years certification requirements have been introduced for secondary teaching, and there is now pressure on governments and employing authorities to require similar certification in respect of teachers and instructors in post-secondary technical and further education, in colleges and in universities. It is argued that lecturers who have never had any kind of systematic training in teaching techniques merely perpetuate early errors throughout their careers, and that the standard of lecturing, tutorial guidance and research supervision is often lamentable. Many universities and colleges have now established their own teaching method groups which provide training and advice for staff on an informal and non-compulsory basis. Diplomas and certificates in university teaching methods are issued, but are nowhere obligatory for employment in such institutions. Large scale government expenditure on continuing education, and efforts to provide the kinds of student support that would make lifelong learning a reality have focused attention on teaching strategies appropriate to adult learning. In the past, the fact that men and women with a successful record of teaching younger children were by no means always so adept at handling groups of more mature students was most obvious in the Colleges of Education, where many staff were recruited direct from school teaching. Proposals have recently been made in England for the introduction of

training courses designed to meet the needs of full and part time instructors and tutors in technical and adult education, but it remains to be seen if the necessary resources will be made available. What is involved is not simply the ability to structure and deliver a lecture in an audible and comprehensible form, or to handle a tutorial with a small number of students, or successfully to supervise a programme of study leading to a research degree. Those concerned with the development of Continuing Education are very aware of the literature on community education and small group interaction, which stresses the facilitating rather than the didactic role of the tutor, the role of *animateur* rather than expert.

Finally, in this brief review of recent developments in teacher education in developed countries, reference must be made to the growing body of research findings relevant to the improvement of teacher education. The proliferation of journals, abstracting services, computer accessed resource collections, thesauri, expert conferences and meetings and completed theses are all testimony to what used to called, before the term became rather fly-blown, the 'knowledge explosion' in teacher education. Although as I have argued elsewhere, classification in this field is hazardous, (Taylor 1973) we can usefully divide such research into 'disciplinary' and 'applied'. In the first group comes all the work in learning theory, philosophy of education, history of education, child development, and a variety of other specialisms that is in many respects *relevant* to the construction and implementation of teacher education programmes, but which is not undertaken with special reference to such improvement. It is in the second category, of 'applied' work, research that *is* intended to be directly applicable to the development of teacher education, that the largest growth has taken place in the past decade. The messages coming from this research are not as yet sufficiently focused as to problem, consistent as to direction and cumulative as to conclusion to provide us with an assured basis for the determination of teacher education curriculum, pedagogy and assessment. Indeed, it remains doubtful if they ever will do so, or if given the nature of our task, it is desirable to hope for the evolution of a single assured and legitimate technology of teacher education. As things are, such research findings find their way into the practice of lecture room and tutorial, into the consciousness and appreciative frameworks of students and teachers by seepage rather than along clear cut channels of influence. Only part of the knowledge that goes into the construction of a teacher education programme is research based. That part is, however, steadily increasing, and efforts continue to be made to establish (to borrow the title of a recent book) a "Scientific Basis to the Art of Teaching". (Gage 1978) This brief review of what has been happening in teacher education in developing countries, if incomplete and idiosyncratic, will not, I hope, be seen as perverse. Before going on to look at the relevance of all this to the developing world, let me emphasis one more point.

The way in which a society defines the role of its teachers is central to the design and implementation of teacher education programmes. In open, pluralistic multi-party states there is no single agreed role definition. Re-

ligious, political, industrial and commercial, social and educational power groups try in various ways to influence such definitions, usually identifying their own prescriptions with the public interest. After the end of the second World War, increasing affluence coupled with an apparent diminution of class conflict and of the importance of political ideology, a stress upon rapid social and technological change and the investment functions of education (which it was claimed were best served by a general and liberal primary and secondary schooling, lest skills be provided that would rapidly become obscelecent and trained incapacity be induced) all served to diminish interest in the role of the teacher as an agent of political socialisation and occupational capability. The stress was instead upon the developmental and cultural aspects of his role.

Economic recession; the perception of sharp disjunctions in the rate of change between knowledge sectors, industrial practice, work-related attitudes and educational programmes; a resurgence of interest in conflict-based assumptions about social relationships; a greater sensitivity to the awareness of north/south, have and have not contrasts on a global basis; anxieties about world ecology and suspicion concerning the investment potential of education, have all helped to alter the emphases in discussions about the role of the teacher.

There is today greater interest in education for capability, in the achievement of minimum competencies, in the integrative potential of the teachers role as an agent of political and moral socialisation and in the dangers posed by a discontented teaching force premeated by radical ideas.

Ways Forward

Contrasts between what I have just described and what is happening in industrialising countries will be obvious enough. Population in the third world is still growing – admittedly at a somewhat slower rate than heretofore, but in a manner that will still present major problems for food and employment generating capacities not only of the countries concerned, but of us all. In many respects, the needs of populations in industrialising countries are much simpler and more direct than those I have so far described. Let me quote from a paper by Hunter (1976) who seems to me to get at the essence of the matter

> "..... there is a great deal of what I call "transferred cultural frustration" being propagated nowadays in developed countries... This protest really arises in the context of western cultural frustration and concerns education in the western world. It is the sort of situation which is not there in developing countries. Children there are eager to get educated, and you don't have to dress up education as play or free activity or all sorts of other things. What seems to be desperately needed is a technical competance, honesty, idealism, and good teaching. These are all elementary things, even if they take time to achieve."

A representative from the third world might say amen to that. He might

go on to say what is needed is not the extensive consideration at expensively housed conferences of the teacher education needs of the third world. These are obvious enough to him who will see. What *is* needed is a willingness on the part of developed societies to pay a decent price for the products of industrialising countries, to get the multi-nationals off the backs of those who are trying to develop indigenous industry; to assist in the production of teaching materials the prime purpose of which is to improve instruction in the regions and countries for which they are intended, rather than to enrich developed world publishers; to espouse the principles of the 'New Economic Order' accepted by the United Nations in 1975 but yet to penetrate the consciousness of business men and citizens in the affluent countries; to quit the intellectual and linguistic colonisation undertaken *in situ* by visiting experts and consultants, or injected through periods of study in Moscow, Washington or London for future administrators and policy makers. But such third world spokesmen are not alas, themselves immune from the hypocricies, the confusions and the tangles in which those of us in the developed world find ourselves in looking for ways in which education in general and teacher education in particular might serve the interests of our respective peoples.

There are few signs that the chronic shortage of teachers which has long afflicted the third world will diminish in the short run. UNESCO has estimated that to provide universal primary education in Asia, Africa and Latin America by the middle of the next decade would require a total of some 12 million teachers, 3 million more than were in service last year. To universalise primary education would need some 4 million teachers to be trained during the period 1977 to 1982.

The fact that birth rates are likely to fall considerably during the final quarter of this century (from 45.6 per thousand to 38.6 per thousand in Africa, from 43.4 to 31.4 per thousand in Asia, and from 38.8 to 28.1 in South America), is substantially offset by increases in life expectancy (from 36 years in 1960 to 43 years in 1975 in low income countries) and enhanced expectations concerning educational provision. It has been estimated by the World Bank (1979) that by the year 2000 the number of children in low income countries will have doubled in comparison with 1975. It is in Africa that the largest increase will occur, about 72%, with 48% in Asia, 47% in South America and only 4% in Europe.

The problem is just as severe at the secondary level. A million secondary teachers are needed for Asia, Africa and Latin America alone. More still, if improvements in primary provision generate additional demands for secondary places.

So at least 5 million *extra* teachers have to be found, recruited, trained, certificated and placed in schools in little more time than it takes an American student to obtain a Bachelors degree and professional training. Whilst a few countries, especially those that have a short term relative advantage in the supply of a particular commodity or raw material may be able to meet such targets, to find and to train the teachers they require, most will not be able to do so. As far as the poorest countries are concerned, to achieve such targets during the next decade will be impossible. The money,

the potential candidates for training, the buildings, the teachers of teachers, the books and equipment and the opoortunities for subsequent employment are simply not there. All this is no eccuse for not making a start. International agencies such as UNESCO and the World Bank can pledge a larger proportion of their funds to the creation of educational infrastructures within which larger numbers of teachers can be educated and trained. When the time is ripe, consultants and teacher education specialists can be recruited for shorter or longer periods to assist in the design and implementation of programmes. Much useful preliminary work can be done in planning the software - the textbooks, the work cards, the TV and radio programmes, the cassettes - that will be needed by new and existing institutions.

All this argues for support for those new and alternative patterns of initial teacher preparation that are coming into existence in the third world. Hawes (1979)described several such programmes, and concludes

> "Although (distance-learning based and 'sandwich')....types of programmes may have been conceived in the face of manpower, financial and manpower pressures, I am convinced that they are potentially more effective than full-time initial training. They offer a way to link teacher training very closely with real conditions in schools; at the same time they provide a very powerful instrument for curriculum development and implementation....."

Second, rather than a movement to restrict the way in which the teacher's role is defined, many third world countries need educational personnel with multi-faceted skills, who can cope equally well with a class of seven year olds and of their parents, who are attuned out only to the basic elements of good primary schooling, but also to the value of participative techniques in adult learning. Before you become impatient, let me make clear that I am not suggesting that African, Asian or Latin American teachers can somehow accomplish what Western teachers have failed to do, by becoming educational polymaths, able to tackle a great variety of problems with equal skill and confidence. Obviously not. But what *can* be done is to identify a modest body of knowledge and range of pedagogic and inter-personal skills that *can* be introduced, learned, re-enforced, practiced and evaluated even during a course of only one or two years duration, or through sandwich and school based schemes such as now exist in many countries.

It would of course be excellent if sufficient numbers of properly qualified specialists were available in third world countries to meet these demands. But they are not, nor are they going to be within the forseeable future.

In many countries, military organisations free of the kind of philosophical scruples and existential doubts that assail teacher educators in the more sophisticated civil sector, have been very successful in achieving levels of numeracy and literacy adequate for the demands of a modern army. Thee have not been over-worried by the anxieties I and others have about the psychological rationale and social effects of the uncritical application of particular theories of instruction. They have simply got in with it, living with the warts on their methods. There may be something here from which teacher educators can usefully learn. Similarly, we should not be too proud to make

use of ideas from industrial and technical training, where these have been shown to work reasonably efficiently.

Third, whilst in developed countries recent years have seen considerable stress on induction procedures, the provision of specialist advice to the newly qualified, more systematic supervision and greater 'accountability', in many countries of the third world the beginning teacher is still very much on his own. Supervision is in many cases still rudimentary. Full responsibility for a class begins on the day the first appointment is taken up - if not before. All this requires of the teacher a degree of commitment and self-reliance that can only come from a process of occupational socialisation more explicit - and sometimes more restrictive - than the now conventional Western model. The notion of teaching as the work of a secular priesthood is now largely dead in the developed world. It is by no means so in third world countries, nor could their social and educational policies be implemented without the expectation of a personal commitment on the part of the teacher more inclusive and demanding that that of his Western counterpart. The Western observer must be careful, therefore, not to misunderstand the semi-Monastic character of some training institutions, and would do well to remember the way in which teacher education for mass primary schooling was achieved in his own country.

Fourth, while the search in the developed world is for more sophisticated ways of recording classroom events, feeding back information to the teacher about his early efforts, assessing learning outcomes and measuring 'value added', the concern of third world teacher educators is for the design and application of intermediate and low technology methods. As someone who makes very full use of the present day high technology available in academic institutions, from the dictation of papers (like this one) onto audio tape, to the use of computerised information retrieval and audio visual methods of presentation, and who positively looks forward to the introduction of the portable word processor, I am far from dismayed by the idea of 'making do' with less sophisticated techniques. Admittedly the electric typewriter is faster than a manual machine, and a manual is better (and more legible) than handwriting. A dry-print reprographic machine produces quicker and better looking copies than a wax stencil. A wax stencil is better than a jellygraph. Synchronised slide/tape presentations are more impressive than a magic lantern. Slides are more impressive than a flannel graph. But one can *manage* with the manual typewriter or pencil and paper, with jellygraph reproduction, with a blackboard and wall charts rather than their more expensive counterparts. Furthermore, these simpler devices as well as being cheaper and more available, break down less often, and give the teacher an independence which disappears when he uses more complex equipment. When a radio or cassette machine has to be borrowed from a resources room, signed for and returned, a teacher is much less likely to make his own recordings and use these in the classroom than if he or she owned or has permanent use of a receiver and recorder, and can use it without prior booking or the need to remember that someone else wants the equipment concerned immediately afterwards. Many teachers today use sound cassettes

that they make themselves, at home and on their own equipment. Cassette players can be purchased in many countries for little more than the prices of a single textbook.

The growing sophistication of audio visual and reprographic techniques is threatening to rob teachers of their independence and capability in the reproduction of teaching aids. When these are simple, when the means to produce them are reasonably inexpensive and within the teacher's control, when use is not dependent upon external power sources or the availability of technical skill, then there is much greater likelihood that they will be used. Intermediate and low technology aids, such as many older teachers in the West learned to use during their own training courses, are a great improvement on didcctic lectures and dictated notes, and a useful adjunct to printed texts.

Fifth, discussions in developed countries of the limitations of teacher education have little place in the poorest parts of the third world. We have heard a lot in the West of late about how little teacher educators can influence the learning process of their students. The latter have already spent some 13,000 hours in classrooms before they even begin systematic training. During this time they have been observing a variety of role models, and inevitably have already made judgements and internalised habits which will to a large extent determine their own reactions in the classroom. Teacher education institutions and teacher educators themselves lack legitimacy, we are told, in the eyes of teachers and students. "Those who can do; those who can't, teach; those who can't teach, teach others how to teach." Teacher education, as we have already seen, is not firmly rooted in an accepted theory or technology. It is poorly articulated with preceding and subsequent stages of an individual's education, and so on and so on. I have no need to repeat at length criticisms that will be tediously familiar to many of those attending this Conference. Some of these points are also made in the context of the third world. Those who lecture to intending teachers are seldom among the brightest academic stars of their nation's universities. Now that teacher training is no longer the only form of more advanced education available, it has lost status vis a vis university courses and programmes of study that prepare for occupations of higher prestige. But the chief limits are not of this kind. They are simply those of places. adequate equipment, trained instructors, suitably qualified entrants.

The Central Projects Staff of the World Bank Education Department (1978) have recently undertaken a review of more than 30 students of teacher effectiveness in LDCs. The focus of this review was on the extent to which teacher training really makes a difference as far as quality of educational outcomes is concerned - a crucial question for an organisation that spends a large sum of money on supporting teacher training programmes in the developing world. The staff identified 16 major variables that featured in the studies reviewed. They found that as far as the *sex* of a teacher was concerned, males seemed to have greater success with science, females with literature and languages. In contradistinction to the prevailing wisdom in the developed world, males seemed to be more successful in some countries in

teaching younger children. In respect of age, the results were mixed, but younger teachers were less successful than their more experienced colleagues with the older secondary pupils; a not perhaps unexpected finding. As far as *socio-economic status* was concerned, whilst differences in social structure between the countries in which the work had been undertaken made for difficulties in comparison, teachers from higher SES backgrounds tended to be more successful. But here, of course, SES may well be a proxy variable.

It is not possible in this paper to review all the remaining variables in the World Bank Report, but in relation to the main focus of the Review, there was strong evidence for the positive effects of teacher training on student outcomes. Other variables found to be important were teacher expectations of students, length of experience, and the levels of ability and achievement of teachers. In the words of the Review itself

> "Overall, one can conclude from the evidence of the 32 studies covered by this Report, that at least some teacher variables have emerged as very important in explaining variations in student achievement in LDCs, by far the most impressive evidence focussed on variables linked with teacher qualifications and credentials. *Contrary to the arguments presented elsewhere, the evidence here suggests that trained teachers do make a difference."*

In a review of regional 'state of the art' reviews of teacher effectiveness undertaken in Africa, India and Latin America, the Middle East, Malaysia, the Philippines and Thailand, Avalos and Haddad (1978) found the usual inconsistencies in findings, and relatively few clear-cut indications as to what factors need most weight in selecting, training and renewing teaching personnel. But as they point out, the notion of 'effectiveness', problematic enough in the developed world, is even more difficult to pin down in some emerging nation-states, where, for example, student-gain is measured not simply in terms of cognitive achievement, but in relation to the skills and dispositions consistent with nation-building and responsible community participation. It was found, however, that many of the techniques, such as simulation, micro-teaching and inter-action analysis that worked in the developed world also had a place in LDCs, along with that group of approaches that goes under the title of 'enquiry methods'. Ozumba (1978) has commented that nearly all studies of teacher effectiveness in Africa are confined to classroom behaviour, despite the growing stress on the *community* aspects of the teacher's role.

Although more study of teacher effectiveness in developing countries is necessary, it is hoped that the lessons of several decades of such work in the developed work will be thoroughly assimilated, and that time will not be wasted on enquiries that, whatever their methodological sophistication, are sterile in terms of implications for policy and practice. In particular, given the complexity of the variables involved, and the fact that much of the apparently 'hard' data that is produced by effectiveness studies is essentially inter-subjective rather than 'objective', we should not be afraid of using informed judgements and some of the procedures that fall under the heading of 'illuminative evaluation' as a basis for policy decision.

Sixth, industrialising countries need as soon as possible to develop their indigenous research capacity in education, and to make available to teacher preparing institutions and universities reports and findings relevent to the conditions and problems that teachers will meet in the schools.

This may seem inconsistent with earlier suggestions about the development of alternative low cost programmes of initial preparation. Is it not the care that in the developed world a high level of research activity in education is associated with the existence of very academic 'long-course' institutions and a high per-capita expenditure? This may indeed be the case. It does not follow that educational research in developing countries need be a similarly high cost activity, but in any case the money required is modest in relation to the task of meeting other educational needs that arise on a mass scale.

The arguments in favour of an indigenous research capacity are obvious enough. Even in such fields as basic learning theory the possibilities of 'technology transfer' are limited. Most kinds of policy oriented work must be undertaken in the economic and social circumstances to which they relate if they are to have any useful implications for practice. Research training based on findings from the developed world does little to direct attention to and help solve local educational problems. The possibility of building a capacity for advanced work and for the home-based training of senior educational personnel turns on the availability of research and writing undertaken in the countries concerned.

There are, of course, limits in terms of methodology, scale and problem, to what can be done. Some issues are too politically sensitive to be amenable to empirical investigation by means of surveys, questionnaires or participative methods. Not all educational institutions have ready access to up to date means of data analysis (although there are countries where the chief limitation on the successful operation of a computer is not lack of equipment or trained personnel but the absence of a reliable supply of electricity). Even so, thee is still much that *can* be done; in research as in other fields there is an 'appropriate technology'.

Conclusion

To treat such a large topic in a short paper is inevitably to invite criticism as to coverage, emphasis and interpretation. All I have been able to do is indicate some ways in which the problems of teacher education in industrialising societies are similar to and different from those of the developed world. At the present time both industrialised and industrialising countries share a common sense of dissatisfaction with the outcomes of their teacher education programmes. However varied the circumstances in which they find themselves, the causes of such dissatisfaction are similar.

There is concern with the *quality* of entrants to teaching, and with the criteria employed in their selection.

Teacher education *curricula* are felt to lack relevance to the problems and circumstances of teachers and the schools, and innovations designed

to overcome these weaknesses (such as Performance and Competency based training) have costs as well as benefits and do not arouse universal enthusiasm.

Methods of *assessment* are often felt to be inappropriate, sometimes overloading the programme, sometimes failing to test those forms of knowledge, skills and competencies felt to be needed by the beginning teacher.

The importance of strengthening *in-service training,* professional development and preparation for specialised tasks is recognised, but shortages of resources (especially to meet substitution costs), geography and lack of professional motivation stand in the way of doing what is seen to be necessary.

The *linkages* between those individuals and institutions responsible for initial training, certification, in-service provision, teacher supervision and curriculum development are often poorly developed and involve problems of status, rank and accountability that are difficult to overcome.

Finally, in pluralist democratic societies teacher education tends to have poor academic and professional status and low priority in relation to social and economic policies. Elsewhere, the attention that it receives as an instrument of national unity or political socialisation entails heavy costs of freedom of action and decision for both staff and students.

I do not believe that these problems can quickly be overcome. As I have already tried to emphasise, there is no one best way, no uncontented technology to transfer. Advances in teacher education are linked with general educational advance, both as cause and effect. The problems are real enough, but as Williams (1976) has argued, a recognition of how far there is still to go does not entail a denial of progress that *has* been made.

I hope that those responsible for teacher education in industrialising countries will be able to persuade their governments that improvements in the education and training of teachers are an important element in raising standards of elementary and secondary education; that the international agencies will give these tasks high priority, and that the growth of our knowledge and understanding of how good teachers can be educated and helped to maintain high standards of professional motivation and performances will, albeit gradually, enable us to overcome some of the weaknesses of existing programmes. Conferences of this kind represent a modest but significant step in the direction of such progress, and I am grateful for having had the opportunity to address you on this important topic.

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Teacher Education and National Development in Asia

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Linking Education with Development

The last three decades have witnessed in Asia progressively deepening national commitments to development and the adoption in all countries of the region of development planning as the means for realising national development goals. The perception of national development goals has become a crucial factor in determining national policies. Almost every country has completed a series of five or four year plans which have generated a wealth of experiences and insights, preparing the way for the initiation of new five/four year plans successively.

In the first generation of development plans in the decade of 1950s the main emphasis was on increasing GNP growth rates and bringing about techno-economic changes through industrialization, urbanization and modernization. These development efforts, centred almost exclusively on GNP growth rates, did yield considerable gains but at the same time deep-seated imbalances revealed themselves. These underline the lesson of experience that GNP growth alone cannot offer solutions to the problems which the developing countries are facing.

In this development strategy, the link of education with development was seen in terms of education as a source of providing the economy with skilled workers and high level manpower, and as a means of making the general mass of people politically and socially conscious. The resultant educational strategy led to a spectacular expansion of school enrolments. This expansion however took place within the existing structures *(more and more of the same)*. The corresponding teacher education was in the main designed as a source for the supply of trained teachers possessing the usual technical skills. The systems which were being expanded were the handovers of a previous era in which the context was stability and stagnation rather than growth and development. Although considerable progress, particularly in quantitative terms, was achieved during this period of first generation planning, educational growth failed to meet the equity expectations of national societies and showed up a variety of imbalances, notably in the output of the education system and its productive use in the national economy.

The new development policies in the countries reflect profound changes in the perception of the development process. Their focus is much wider and goes beyond exclusive concentration on economic production. They are more consciously directed to social equity, to the problems of poverty and deprivation and to enhancing the quality of life of the people in a way which must take into account simultaneously economic, social, cultural and political dimensions of the development process. The aim of indigenous and self-reliant growth is an essential part of the development strategies of the countries. The Fourth Regional Conference of Ministers of Education and those responsible for economic planning in Asia and Oceania (convened at the invitation of Unesco at Colombo in July-August 1978) referred to these new development strategies and pointed out the emphasis in them on "the principles of social equity and distributive justice which must complement strategies. In the interrelationship of development and education, education, far from being a peripheral sector, is seen as one of the core elements of the development process." (*Final Report,* ED/MD/53 Paris, October 1978).

New Educational Goals in Asia

In the context of these new policies of overall national development, the countries in the Asian region have in recent years undertaken important initiatives to review and reform their education systems. Indeed there is hardly a comparable period in the past when the governments of the Asian countries have engaged themselves so extensively and deeply in reorganizing their educational endeavours and redefining the educational goals.

For example The Government of *Afghanistan* has adopted a new educational policy which has clear directions for educational support to disadvantaged populations. Following on the Presidential Education Commission (1972) in *Bangladesh,* guidelines were formulated for a significant range of reforms directly associated with social and economic development, especially of populations below the poverty live. The National Education Commission of *India* generated a new Education Policy, which has itself undergone further changes in the last few years towards a more sustained and immediate impact on economically and socially deprived populations. These policies have manifested themselves in two programmes for mass education – the National Programme for Universalization of Elementary Education, and the National Programme for Adult Education. In *Indonesia's,* Second Five Year Development Plan (1974-1979), again major policy measures have been incorporated closely linking education with socio-economic and cultural development. A re-appraisal of the educational system was made by the Socialist Programme Party in *Burma,* in the context of socio-economic growth and, in 1974, new educational policies were formulated, including universalization of primary education, enhancement of technical vocational education, and reforms in tertiary education towards greater functionality in respect of the development effort. A ministerial investigation of educational policies and

objectives is being carried out by a Cabinet Committee in *Malaysia,* to provide further guidance for the convergence of educational and development efforts. *Republic of Korea's* Fourth Five Year Development Plan (1977-1981) has incorporated basic policy directives in education in line with Korea's urgent socio-economic and cultural needs and predicted growth. The National Educational Systems Plan of *Nepal* developed by the National Education Committee with specific reference to educationally underserved populations, is now being implemented, carrying systematic education to a vast number of first generation learners. Developing further the Education Policy of 1972, the Government of *Pakistan* has produced a further movement in National educational reform with a new Policy in 1978 with emphasis on both reaching disadvantaged populations and incorporating Islam as an integrating philosophy in all development efforts. The Government of *Papua New Guinea* launched the Independence National Development Strategy in which education actions are integrally linked, including the enhancement of literacy and education aimed at the improvement of the quality of life. In the *Philippines,* following the report of the Residential Commission to Survey Philippines Education, the Education Development Decree was promulgated in 1972, which itself has generated an extensive series of educational reforms across the entire education system focussing upon social, cultural and economic developments. *Sri Lanka* produced a series of far-reaching reforms in 1972 to enhance the relevance of education to the socio-economic and cultural needs of the country. Following on the recommendations of the Education Reform Committee, *Thailand* has introduced the 1977 National Education Scheme in which the educationally underserved become the major target for educational activities. Major reforms directly related to socio-economic development efforts have been carried out in the *People's Republic of China,* the *Democratic People's Republic of Korea,* the *Socialist Republic of Viet Nam* and the *Lao People's Democratic Republic.*

Critical Role of Teacher Education

The linking of education to national development calls for extensive, and at times fundamental, changes in the education systems. The emerging directions of teacher education in this region should be seen in this transforming context of educational change. Teacher education is by far the most crucially important instrument for realising the purposes of development education. It has however to assume new roles both in the mediation of learning and in the mediation of development. These roles imply development of new professional skills (e.g. in teaching-learning programmes for deprived and disadvantaged population groups); development of a broader knowledge base (e.g. in teaching-learning programmes related to new areas such as population, environment, agro-technical etc.); and development of new attitudes and values (e.g. those called for in participation in community development).

In a region as vast and diverse as Asia is, there is inevitably considerable diversity in the countries in the formulation of development goals and the educational objectives related thereto. There are however at the same time some striking commonalities. In the development policies of the countries the role of education is signified in broadly three ways. First, education is a basic human need enabling people to be productive and self-fulfilling. Second, education is a means for meeting other basic needs, for example health, nutrition, shelter. Third, education is seen as an essential activity contributing to sustained and accelerated overall development, for example in community participation, generation and application of productive skills.

Education as Basic Human Need

Education as a basic human need is embodied in the principle of equal access to education and equal educational opportunities. This goal has been powerfully reinforced in recent years by the experiences of the developing countries in that the benefits of the relatively high economic growth rates achieved during the last decade have failed to ensure equitable distribution of benefits to large segments of the society. In consequence of these inequalities and disparities, the participation of the people in the development process was constrained. Social and economic inequalities and educational equalities tend to go together, the former engendering the latter and being reinforced by it. Therefore development policies which aim at reducing social and economic inequalities give special attention to measures for providing broad-based access to educational opportunities as an indispensable means of social mobility.

The provision of school places does not by itself create equal access to education. Equal educational opportunity is inseparable from equal chances of success and is thus linked with all other aspects of education, individualized learning process, teacher-pupil relationship, education as continuing learning, open-learning systems, and community participation in education.

In most developing countries of the region the goal of more equal educational opportunities implies the development of mass education which comprises three components; provision of educational services to all young children in forms suitable and appropriate to their learning needs; education and training services in suitable form to young people who are not in school; and educational and training services to adult population with special attention to the adult illiterates. This approach to education as a basic need implies that education cannot be limited to schooling and even less to what happens in schools. There are diverse sources of learning; the home, the family, the social and cultural life of the community and its world of work. The education process is seen as related to these diverse sources in different forms. The school programme is broadened and enriched by the learning resources derived from the community, with learning in school taking place in combination with work and social activities. Learning in school and learn-

ing outside thus form a continuum.

This perception has prompted many countries in the Asian region to initiate programmes of non-formal education as complementary to the formal education system. In most countries non-formal education programmes provide literacy and productive skills training to adults. But non-formal education programmes are also designed to serve the education and training needs of young people who are not in schools because they were either deprived of access earlier or dropped out. For example the Meadow School in India or the Lahachok Project in Nepal are based on the idea that educational services are taken to the children where they are in remote and isolated areas.

Non-formal education programmes are growing rapidly in the developing Asian region. They are almost by definition specific to locality and population group. There are however certain characteristics they share in common; namely i) they rely on community support and active participation and are community-based, ii) they use indigenous resources of learning to the meximum degree, iii) their teaching-learning methods and procedures are related to specific needs and environments of the population served.

In the approach to education as a basic need, another significant development in many Asian countries is the evolution of new forms or types of schools. The community school serving the basic learning of both children and adults is a strongly growing movement. In certain other countries education and work are combined in "Part-Work-Part-Learning" Schools.

Education to Meet Other Needs

The second link between education and national development is education as a means of meeting other basic needs. This includes the development and sensitization of the education systems to respond to new problems and to the accelerating pace of societal change.

A general criticism of the education systems as they evolved historically in many countries of the region is that they functioned in isolation from their environment and real life situations. Dominated by an exclusively cognitive view of learning, their methods and programmes are abstract. This criticism trenchantly made in all education reform policy statements of the governments is nowhere more clearly borne out than in the education systems' response to meeting other basic needs and new life problems. Education in a development setting has an influential role to play in the provision of other basic needs, nutrition and health services, for example. Education enters, or should enter, as an essential component in all organized efforts to speed up development. Malnutrition and undernutrition affect the learning capacity of infants and children. Improvements in nutrition can greatly improve the educational gains and ultimately productivity and income.

Then there are new problems with which the society may be faced. The

capacity of an education system to respond dynamically to such new problems and challenges is a measure of education's role in national development. In relation to most of these problems education is called upon to perform a consciousness-raising function and to provide knowledge, skills and trained manpower to deal with them. In the Asian context these new problems and issues include for example population growth and environment protection, the responses to which are population education and environment education. At another level is the wide field of modernization based on science and technology education. These are new directions in which teacher education programmes are being oriented, marking a significant departure from the traditional forms of teacher education. These programmes have certain innovative features in common, in addition to stressing basic teacher skills:

i) the emphasis on the role of the teacher as a development agent and as a community leader working as a member of the team of development agents in an area;
ii) the emphasis on understanding the learning problems of children and young people from the deprived and disadvantaged population groups and for determining the techniques of learning/teaching most suitable for the learners;
iii) the emphasis on identifying and organizing learning resources derived from a variety of sources and of linking the school through the teaching learning process, with the life of the community;
iv) the emphasis on cultivating knowledge of development processes, of economic and social problems, of non-formal and other modes of education and of community participation and mobilization;
v) the emphasis on ensuring that teacher trainees are in direct contact with the milieu in which they will work and training is conducted close to real life situations.

Education for Development

The third link between education and national development is education as a sustaining and accelerating force in overall socio-economic development. In most Asian countries, the two development areas to which special importance is attached are rural development and productive skills - generation.

In the development strategies of the earlier decade the energies of developing countries were centred on extending the "modern sector" of the economy. As a result, the "modern sector" absorbed a disproportionate share of scarce capital and the potentialities of the rural traditional sector suffered neglect. In line with this general development strategy, educational development was also heavily skewed in favour of urban development. In the new development and educational policies, special attention is now being given to education's role in rural development and to the formation of skills relevant to the needs of rural sectors of the economy. Consequently in many countries of the region, educational institutions in the rural areas and teachers and teacher educators are actively involved in rural community

development programmes. New teacher training institutions have been established in some countries, for training in areas of skills relevant to the rural sector. Many countries, such as Burma, Nepal, Philippines, Thailand, India, Afghanistan, Bangladesh, Republic of Maldives, Indonesia, and others have initiated such interlinked programmes.

The role of education in the generation of productive skills involves relationship between general and vocational education and the interlinking of general education and productive or socially useful work experiences. In almost all developing countries in Asia, educational policies reflect a profound concern about the "bookish" nature of the learning that takes place in the schools with the result that the process of learning is isolated from the context of action and work and the learners on leaving school find themselves ill-equipped with productive skills. In a growing number of countries in the region educational programmes have been evolved for work-oriented education in which productive work and general education are integrated and combined. This interlinking of education and productive work is not a substitute for vocational training in the sense of preparing students for specific occupations. It is intended to provide exploratory experiences in the world of work and social living which give a foundation on which occupational training can be built and career choices made. This contributes to character training and to the acquisition of manual skills by upgrading manual work, seen as a part of the integral training of young people.

Productive work-based educational programmes can introduce profound changes in the relationship between education and development. They are also the most challenging to the existing established education systems in the developing countries. The role of teacher education is critically important in these programmes. The Fourth Regional Conference of Ministers of Education and Those Responsible for Economic Planning in Asia and Oceania (Colombo, July-August 1978) adopted a recommendation on the theme of work-based education and emphasized in particular the critical importance of teacher education, calling upon the Member States in the Asian region "to intensify their efforts to promote work-oriented education as an integral part of their school curricula and to give necessary attention to supporting reform measures, particularly as regards the pre- and in-service training of teachers in work-oriented education, and the suitable adjustment of examination system". (*Final Report,* Recommendation No. 14)

The competencies which work-oriented education calls for are different and more varied than those which subject teaching generally involves. The articulation of education and work has to permeate the teaching of all subjects. Since the content of such programmes is necessarily derived heavily from the local socio-economic environment, the teacher assumes a key role in curriculum development. Teacher preparation for education-work programmes calls for a wide range of skills and competencies including in particular the roles in mobilizing people's participation and community expertise.

Asian Programme for Educational Innovation

This is a rapid and inevitably brief survey of some of the ways in which in the educational policies of the developing countries in Asia are seeking to integrate education with national development. Such articulation and integration involves new orientations in teacher education. While it may not be possible to claim that these new orientations have been realized across the board, there are in almost all countries in the region significant experiments and innovations in which new directions of development are being explored and tested. Unesco has in co-operation with the Member States and other concerned international organizations initiated a regional programme which is focussed on promoting inter-country exchange of experiences, insights and skills relating to educational innovations for development. This programme called the Asian Programme of Educational Innovations for Development (APEID) was started in 1973 on the recommendation of the Third Regional Conference of Ministers of Education and Those Responsible for Economic Planning in Asia held in Singapore in 1971 and the authorization of the General Conference of Unesco in 1972. The *Asian Programme* is designed, developed and implemented jointly with the Member States in Asia and Oceania. They have determined five development themes in relation to which educational innovations taking place in the Member Countries are to be seen. These development themes reflect the priorities in the countries' development and education plans. They are,

1. Education contribution to rural development;
2. Education contribution to the development of productive skills relevant to economic development;
3. Universalization of education at the early school levels and functional education for out-of-school youths and adults;
4. Better health and nutrition;
5. National unity and international understanding and co-operation.

The preparation and training of teachers and educational personnel is one of the most important areas of educational innovations for development articulated in the above five themes. Therefore in the area of teacher education the Asian Programme has over the last six years carried out co-operative studies, exchanged experiences, held regional seminars and advanced level national workshops.

Teacher Education and the Improvement of Instruction

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Current Concerns

Today, in many parts of the world, efforts are being made to improve instruction in schools and colleges. For more than two decades most nations have been preoccupied with providing teachers, classrooms and other facilities for the rapidly increasing enrollments. Now, however, it is becoming clear that the expectations for education are not fully realized by getting teachers and students into the classroom. Many students are not learning what the schools are trying to teach. Even in countries like the United States, where universal literacy has been an ideal for two hundred years, nearly twenty percent of the children do not learn to read although they are enrolled in the schools. In many other countries the proportion of children who do not achieve literacy is greater. As these facts have become evident, educational leaders are calling for improvements in teaching in order to reach all children.

A second factor which has stimulated efforts to improve instruction is the demand in the modern world for learning which is more complex than the educational objectives of earlier times. In reading, for example, the objective has been to help the student learn to comprehend such reading matter as stories, newspaper items, and directions for making and assembling materials. Now, with the increasing spread of propoganda, of advertising, and other printed matter that may be misleading, students need to learn to evaluate critically the material they read. In arithmetic, the objectives in earlier periods were to learn to compute and to apply computation to the everyday problems they encountered in making purchases and in constructing things. Now the demands for quantitative problem-solving are more complicated in such matters as making budgets, dealing with complex tax systems, comparing alternatives in purchases, and in planning community-action programs.

In social studies, objectives of earlier times emphasized understanding the structure of the political system, developing respect for constituted authority and appreciation of the government. Now, with a rapidly changing society, the school is expected to help students understand the changes likely to take place in the supply of raw materials, in the pollution of the

environment, in the patterns of employment, and in the way work is carried on. Furthermore, the school is now expected to help students acquire the attitudes and skills necessary to deal constructively with these changes. The emphasis in educational objectives upon the development of thinking, problem-solving, and creativity in adapting to new conditions is now seen as something important for students in all aspects of their lives. We have discovered that those who use knowledge constructively are able to contribute more to productivity in occupations, stability in homelife, wisdom in politics, and helpfulness in social relations. Finally, these new educational goals are recognized as important in a developing society where occupations requring mainly physical strength and manual dexterity are being replaced by those demanding intellectual and social skills.

To summarize these changing educational expectations, schools are increasingly being asked to reach an ever larger proportion of the population and to help their students learn more complex and difficult things than were demanded of the schools of an earlier period. These expectations can only be met through a substantial improvement in instruction.

The Teacher's Role

The improvement of instruction is largely dependent upon the teacher. In obtaining financial support, in recruiting teachers, in building schoolhouses, and in establishing access and other enrollment policies, the state and district administrators exert a major influence. These are matters that can be directed at a distance from where learning takes place. But in the improvement of learning, the classroom teacher, the students, the school building principal, and the parents are the major actors. An effective educational program requires that these essential actors: (1) understand the purposes of the program and the parts they must play; (2) believe that the program offers a constructive way for them to utilize their talents; (3) can devise procedures, when necessary, to perform their roles successfully; (4) perform their roles and receive information regarding their effectiveness in these roles. Put more simply, for the teachers to be effective they must understand what they are doing, must believe in the importance of what they are doing, must do the work well, and receive information to know how well they are doing so that they can try to do better when necessary. The same requirements hold for the principal, the student, and the parents. All of them are involved in the improvement of learning.

With these conditions in mind, let us review the situation in today's classrooms. Many school systems have been so occupied with providing teachers and buildings that little or no attention has been given to the improvement of instruction. In most of those cases, the teachers follow the practices that they learned when they were students, practices that helped some students to learn but did not help others. Generally, the students who were helped to learn by the teaching of the past are those who came from homes where the parents had been educated or where the parents greatly respected schooling

and instilled strong motivation for school learning in their children. In many of these homes there were books and other materials that students could use and the children were required, or at least encouraged, to study at home. Students who were not learning what the schools were teaching generally came from homes lacking these supporting conditions. To reach them requires something more or different from the practices of the past. Schools of the past did not give major emphasis to the development of thinking, problem-solving and creativity in adapting to new conditions. Hence, when teachers of today follow the practices of the teachers they observed in their own schooling they have no model to guide them in seeking to attain the new educational objectives. They now have a different role which requires more of their own understanding, ingenuity and creativity. This places a heavy responsibility upon teacher education.

Constructing New Courses

An obvious early response to the demand for helping students attain new and more complex objectives was the development of new courses by central agencies or committees of scholars. In the United States during the last twenty-five years the most extensive effort to improve instruction has been in the production of new courses. In most cases, the new courses have provided illustrations of more authentic content and more complex objectives than were previously available. These have been helpful to educational leaders in the various school subjects. However, one problem that was not clearly recognized when these projects were undertaken was the important part that teachers play in the actual operation of the curriculum in the classroom. Curriculum materials are not effective unless used by teachers who understand their purpose, believe in the purpose, understand how they are to use the materials, and feel confident they can use them effectively.

John I. Goodlad, of the University of California at Los Angeles, and his colleagues observed a sample of classrooms that were avowedly using some of the new science courses. They found that about two-thirds of the classrooms were using the new science materials in the same way they had used the former science textbooks--pages were assigned and students recited what the books said. Thus, in spite of the fact that the new courses were designed to stimulate and guide student inquiry in science, in the classrooms a majority of teachers were using the materials to foster student memorization. This is another illustration of what has been learned in many parts of the world. The development of new curricula that will actually be effective in operation takes more time and resources than the selection and formulation of content, because those who teach the curriculum must understand it. Curriculum reform involves appropriate and systematic participation and education of those who are teaching it.

Emphasis on Methods, Technology, and Teaching Aids

A second common response to the demand for improved instruction was the emphasis given in the preparation of teachers in new teaching techniques, in new technologies, and other teaching aids. In the euphoria of new inventions, each of them was hailed by some educators as a panacea for making instruction more effective with students not now being reached and for achieving the more varied educational objectives of today's education. These efforts encountered two serious difficulties. They required a more elaborate repertoire of teacher behavior of those who were just entering the profession and were not highly confident as to their competence as teachers and their ability to manage classrooms effectively. The initial tasks of a professional person need to be relatively simple, manageable, obviously contributing to the mission of the profession, and clearly representing the central characteristic of that profession. Sophisticated teaching techniques and the employment of various teaching aids are not simple activities. They require some skill in management. They focus the attention of the teacher on the techniques so that the basic mission, stimulating and guiding learning, is often forgotten and they frequently confuse, giving the beginning teacher the impression that teaching is primarily a technical occupation rather than a human service. As a result, many beginning teachers were less effective than their predecessors.

What is required is the development of teacher education to be carried on in two stages: initial preparation and continuing education after the teacher has become sufficiently established and confident of his performance to proceed with efforts to become more competent and to be able to deal successfully with difficult problems.

The Initial Preparation of Teachers

One of the reasons for the seeming inflexibility of professionals to change their methods of work with changing conditions is the view of many that their profession is the carrying on of traditional practices rather than the accomplishment of a social mission.

This is true with many teachers as well as with professionals in other fields. Some teachers think that teaching is presenting subject matter or overseeing the practice of skills, rather than viewing their profession as helping students acquire ways of thinking, feeling, and acting that serve as resources for carrying on their occupations, for meeting their responsibilities as citizens and family members, and givin meaning and satisfaction to their lives. The parable of the two construction workers--one who said he was laying bricks and the other who said he was building a cathedral--carries the essential message of initial professional education. The teacher needs to understand the high mission of teaching--the profession primarily concerned with helping persons

to become civilized, more human and humane, rather than to live out their existence imprisoned within a narrow view of human beings, including themselves, as little more than beasts. This is the great mission accomplished largely through helping students learn to draw upon the resources of communication, of quantitative thinking, of history, literature, science, social studies, art, music and other fields of human endeavor. The rewards of teaching are many, but a chief one is the joy of seeing one's students gain new understanding of themselves and their potential, new vistas of the world and mankind, new skills with which to achieve their purposes, new ways for disciplining and enhancing their emotional lives. The joy of Eliza in *My Fair Lady*, when she learned to speak standard English, was sung by her: "I could have danced all night." Many times we as teachers have seen the positive reactions of our students as they have learned something significant to them. Later we have felt greatly rewarded as our students have used what they have learned to serve both society and their own development. For a prospective teacher to fail to appreciate the great mission of the occupation is to lose the sense of dedication--teaching becomes just a mundane job.

Furthermore, when teaching is seen only as a job, it is likely to be defined by its present practices making improvement of instruction difficult. When it is defined clearly as a mission, the teachers can be guided by the objectives of the mission and thus be sensitive to difficulties encountered in achieving these objectives. Often, too, as they sense a particular difficulty they are stimulated to invent a means of overcoming it rather than seeing the difficulty as something wrong with the students because they don't respond to the traditional procedure.

In the initial preparation of teachers, a second major purpose is to help them understand procedures as means of accomplishing the mission, means that often require modification to adapt them to the needs of particular students, and changing as new educational objectives are chosen by schools. The purpose is to help the teacher to understand quite clearly what the curriculum and instructional program is in the schools in which he will be working and his role in implementation and also to appreciate the fact that the program will change as problems are encountered or new objectives sought, so that he will expect to be developing new practices as situations change.

A third emphasis in the initial preparation of teachers is suggested by the recent studies of successful and unsuccessful efforts to reach students who have not been learning what the school seeks to teach. The successful programs were those in which the students easily sensed that their teachers had high aspirations for them and really cared about them as individuals. The unsuccessful programs were commonly those in which the teachers had low aspirations for their students' achievements; where they believed the students couldn't be expected to learn much, where they depended on programmed materials or other technical aids without giving the students personal encouragement or appearing to care whether students learned or not.

The learning experiences for prospective teachers that are likely to help them care for all kinds of students, and to expect high achievement from all,

will include both classroom and seminar work devoted to reviewing and discussing recent experiences and experiments indicating that all children can learn what schools seek to teach, and direct experiences with children and youth devised to help prospective teachers appreciate human personality and to learn to care about the achievement and development of students. These experiences, too, should be designed to enable prospective teachers to learn about the many activities and ideas that stimulate and motivate students and furnish satisfactions and rewards. Opportunities should be furnished for prospective teachers to explore their own efforts to stimulate and guide students in a few significant kinds of learning activities. In these on-campus and off-campus experiences, prospective teachers can gain a clearer understanding of the essential conditions for effective learning and begin to internalize the principles of learning in their own repertoire of behavior.

A fourth emphasis in the initial preparation of teachers who can improve instruction is on identifying problems in the teaching-learning situation and program that are not wholly effective and seeking to make improvements devising and trying out possible solutions to the problems identified. This is an important activity in focusing attention on those parts of the instructional program that are not wholly effective and seeking to make improvements where they are most needed. This kind of problem-solving is similar to the activity of the auto mechanic in "troubleshooting."

The metaphor, "troubleshooting," is used to suggest that the prospective teacher can learn to check each of the essential conditions for learning to see what is missing or failing to function adequately when students are not learning, just as the auto mechanic, the "troubleshooter," checks over the fuel system and the ignition system of the automobile in seeking to find out what is missing or failing to function when the automobile does not run. The commonly accepted view of conscious human learning is that of learners carrying on a pattern of behavior, some way of thinking, feeling, or acting, that is perceived as new and attractive. The learners find the behavior satisfactory and continue practicing it until it becomes part of a repertoire of behavior. Then we say they have learned it.

This brief description indicates some of the essential conditions for conscious human learning. The learners' motivation stimulates them to try to carry on the new behavior. They have a sufficiently *clear idea of what they are to learn* to guide their efforts to carry on the behavior. The learning activity is appropriate, that is, it is not so simple that it requires no effort nor so difficult that they are unable to carry on the behavior. A student who perceives a proposed learning activity as so difficult that he or she will be unable to do it will avoid making a serious effort in order not to be humiliated by failure. A student who views a proposed learning activity as so easy that it has no challenge is not likely to get satisfaction from carrying it on.

As the learners *carries on the learning activity successfully* they need to obtain *satisfaction* so as to provide stimulation for continued practice. If their initial efforts are *unsuccessful* they need to receive helpful information, *feedback*, about the inadequacy of their efforts and get *encouragement* to try again the same or another appropriate learning activity.

In order for the new behavior pattern to become internalized, the learners need to carry on *sequential practice* until it becomes part of their repertoire of behavior. Sequential practice means that each subsequent practice has new aspects that go beyond the learning reiteration of their previous learning activities, it quickly becomes boring. they no longer give it attention, and it does not help to internalize the behavior.

Finally, behavior patterns learned in school are to be used wherever they are appropriate, in out-of-school situations as well as those within. To ensure this *transfer* of learning, practice of the behavior in various situations within and without the classroom is necessary.

This list of some of the essential conditions for school learning can be understood by the prospective teacher and, when students are having difficulty in learning, the situation can be analyzed by checking on each condition. Are some students lacking motivation to learn what the teacher is trying to teach? Do all the students have a clear idea of what they are expected to learn? Do some students perceive the learning activities as too hard for them, so they will not attempt them? Do some students perceive the learning activities as too easy? Are students who are carrying on the learning activities successfully finding satisfaction in their efforts? Are students who are not carrying on the learning activities successfully getting information (feedback) about the inadequacy of their efforts and suggestions for improvement and are they encouraged to try either the same activity again or another that seems better suited to them?

Are all students carrying on adequate sequential practice?

Are all students learning to use, outside of school, what they are learning in school?

As the prospective teachers begin to think of the teaching-learning situations in this way they are better able to identify points where improvement of instruction is needed and will increasingly be able to make changes that are likely to produce a situation more conducive to effective learning--if programs for the initial preparation of teachers strongly emphasize these.

Preservice and Inservice Education

The potential contribution teachers can make to the improvement of instruction cannot be fully realized in their early work in the classroom. First of all, time is not available in the preservice program of teachers education for them to acquire all of the intellectual and emotional resources that could be halpful in carrying on their work. The previous discussion has given emphasis to a few major inner resources that a beginning teacher can acquire that furnish a sound basis for his or her initial classroom work and a good foundation for continued professional development, but it is only a small part of the teacher's ultimate potential. The second problem is the likelihood of continuing change in the society, in the profession of teaching, and in the body of relevant knowledge on which the teacher could draw. Even if there were time in preservice education for the prospective teachers

to acquire all the tools they presently need, there would be a need for new skills and capabilities in the future.

In consideration of these two problems, preservice teacher education must be conceived as a substantial beginning of a life-long program of professional education. The concepts, principles, and practices of teaching are matters for continued inquiry and development throughout one's career. As time goes on teachers should be able to elaborate their inner resources more deeply and more comprehensively. Their professional work should stimulate reflection and study of their experience both to improve practice and to understand more fully relevant theory. The most effective way of stimulating the teacher to engage in continued professional development of this sort is to focus inservice education programs on helping to identify critical educational problems in his or her own school and to attack them constructively.

This recommendation is made because most teachers want to solve problems when they find them in their own situations. Furthermore, the solution of some of the critical problems encountered in a school require the acquisition of new attitudes, knowledge, and skills on the part of persons involved. To acquire them, some form of inservice education is necessary. It has also been found that to learn just a few of these things requires a good deal of time, effort, and guidance. Hence, an effective and efficient program must first determine what those involved want to learn and then provide them with the necessary opportunities for learning. From this point of view, a school planning to attack its serious educational problems must at the same time plan for continuing education programs that will furnish opportunities for teachers to acquire what they need in order to deal with these problems. In other words, inservice education programs will generally need to be evolved from the needs of the schools in which the teachers work rather than being developed apart from these schools.

Summary

This paper has stressed the importance of instruction as the central responsibility of the teachers. It has also maintained that teaching is essentially a human service activity in which the concern for students, high aspirations for students, and clear conception of the learning process are the chief characteristics to be developed in the initial preparation.

Furthermore, the teachers should view their education as a life-long activity in which their own situation will be a real laboratory for their development as they work with others, identify critical educational problems in their schools, and seek to solve them. This is an effective way to improve instruction.

Closing Address: Postscript on the World Assembly

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During the last five days, we have gathered together here to exchange views on teacher education in relation to national development.

Though it is commonly accepted that education is the cornerstone of national development, by and large society fails to realize the vital part that education plays for its growth and welfare. Above all, it fails to recognize the place teachers occupy in the improvement of education. As the Minister of Education of the Republic of Korea aptly stated in his opening address, "Teachers play a pivotal role in the development of the overall educational potential of the nation." Therefore, it is self-evident that, "The highest priority must be given to carrying out the government's policies on teacher education."

Nevertheless, it is not an easy job to convince society at large of these crystal clear facts and self-evident principles of national development. It goes without saying that it will take a major effort to change the attitude of the general public in terms of how they look at education and teachers. We must be prepared to make that effort. Again the Minister of Education said, "After all, elevating the quality of teachers is the essential first step toward ensuring that teachers will receive the desired kind of social recognition for their services. Likewise, turning out teachers who are uniformely of a high calibre will result in an elevation of their social standing as well as an increase in their sense of esteem."

The conference proceedings have focussed upon making teacher education responsive to the changing needs of developing societies. I wish to raise three issues to supplement the discussions.

First, we must be careful when we adopt and apply the systems and methods innovated by other cultures and regions. Without a doubt, there are plenty of new theories and practices that could be applicable regardless of areas and traditions. The world society is shrinking rapidly. Educational activities and practices on many levels could be adopted from one country to another with desirable results and outcomes. It is clear that we need close cooperation of educationists beyond national boundaries and more positive actions by all concerned in this regard. However, one must be very cautious before implementing the results or findings of research or practices in other countries with a different history and cultural background. And, here lies the importance and significance of the study of comparative education.

If education means the forming of minds for constructive purposes, almost

every significant feature in life educates; customs and mores as well as the political system and the physical environment work, family, community, religious and social affiliations, and so on. Therefore, we must be aware of the limitations under which we labor when by "education" we mean primarily a conscious and institutionalized enterprise of humanity, in contrast to the vart variety of unconscious, environmental, cultural forces that may affect a person, a nation, and a civilization. In the words of professor Kandel,

> "The important fact that stands out is that national systems of education today constitute more than ever experimental laboratories dealing with similar problems, to the solution of which traditional cultural backgrounds and current political and social aims as well as economic forces will contribute more than any universal theory of education."

Therefore, the first and most important thing we should do is, as Sadler stressed some eighty years ago, "to try to find out what is the intangible, impalpable spiritual force which, in the case of any successful system of education, is in reality upholding the school system and accounting for its present efficiency." This reenforces the idea that industrialising countries need as soon as possible to develop their indigenous research capacity in education.

Second, we must try to provide a balanced program to our teacher education in terms of general education and professional education. It seems to me that in the process of rapid social change and national development, a one-sided emphasis is put on innovations in instruction and pedagogical methods in preparing and improving our teachers.

Although mention has been made to the humane qualities of teachers we have failed to deal adequately with the liberal and human aspect of teacher education. There is a saying in Korea, "Be a Human before becoming anything."

In this regard Professor Ulich's remark is worth perusing,

> "The teaching profession needs inspired and inspiring men and women. But many of our teacher training institutions have tried to build up their scholarly reputation by being 'scientific' at any cost. Whereas the genuine scientist can be a wellspring of inspiration, the person in a field with different requisites who just imitates the 'scientific method' and confuses it for the total outlook toward life is a source of dullness." With the one-sided emphasis on scientific courses in education the initiation of the student into the cultural tradition has been neglected. Even John Dewey, who, after all, formed his thought in intellectual contact with Plato, Pestalozzi, Hegel, Herbart, Darwin and Marx, is not really understood; only his pedagogical works are read. Our prospective teachers, in whatever institution, are not at all incapable of philosophical discourse, but all they are given to live on philosophically are some quickly acquired "isms." How can people with such preparation arrive at substantiated opinions about problems the solution of which determines not only their own life but the survival of their country's culture; problems such as the relation between self-development and discipline, experience and tradition, state and church, nationalism and internationalism? "

We need, therefore, to introduce our prospective teachers to the source of energy that kindles a person's mental powers through acquaintance with the great treasures of imaginative creation, embodied in religion, literature, and the fine arts. By this means, they shall be equipped with knowledge, wisdom, and sympathy for the young, and for them the methods can be acquired in not too long a time. We all know of some teachers who in methods of instruction were inferior to some of their colleagues and yet made a deeper impression on the student. What was the secret? Such teachers are so deeply immersed in their subject -a poem, a play, an historical event, or a scientific topic- that they change a mere explanation into a re-creation.

Third, the presently fashionable term "national development" should always be considered and analized in terms of "an international" context. Especially since the rise of the oil crises in the early 1970s, it seems that every nation tends to become chauvinistic at the expense of international understanding and cooperation. In the "Charter of National Education" of Korea, internationalism as well as nationalism is stressed. It reads, "This is the time for us to establish a self-reliant posture within and contribute to the common prosperity of mankind without." In another phrase, "The love of the country and fellow countrymen together with a firm belief in democracy against communism is the way for our survival and the basis for realizing the ideals of the free world." It is highly desirable, therefore, that any future discussions on national development be carried out with due deliberation for humanity and mankind.

In closing, I should like to call your attention to the old phrase of the Orient *"the Trinity of King, Teacher, and Father,"* indicating the high and prestigeous status that teachers enjoyed. Another relevant Oriental saying is *"Follow your teacher three feet behind him so that you don't tread on his shadow."* referring to respect and esteem for one's teachers.

Those days seem to have gone now under the impact of industrialization. For the educators of teachers the most important thing to do is to direct efforts to regain this respect and esteem which is the key to improving the quality of education and life of the people. In order to fulfill this function we have come together at the 26th ICET World Assembly. And, I am fully convinced that ICET will continue to advance forward to that end.

Section Two:

INSERVICE TEACHER EDUCATION FOR NATIONAL DEVELOPMENT

Inservice teacher education in Africa, the U.S. and in the Eastern Caribbean are described by LIJEMBE, SHARP, and GOODRIDGE respectively. The Section concludes with a summary of LESKIW's and international panelists' statements on problems of planning and implementing inservice teacher education programs.

Inservice Teacher Education in Kenya

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In her efforts to improve the quality of education, Kenya has continued to use a variety of inservice teacher education programmes particularly after she attained Independence in 1963.

Before Independence, there was only a limited number of refresher courses organised by the Ministry of Education because there were only a few teachers in African Primary Schools. Even fewer of such courses were organised for African Secondary School teachers.

After Independence, the Government placed and continues to place a very high priority on education as a means of enhancing national development. Consequently, Primary and Secondary school pupil enrolments rapidly increased thereby creating a high demand for qualified teachers and necessitating the construction of many primary and secondary school buildings. Also, considerable attention was paid and continues to be paid to the activities of the Kenya Institute of Education (K.I.E.) which has the prime duty of preparing relevant text-books and other teaching materials for use in schools.

This rapid expansion of the school system together with changes in school curriculum, led to an increase in the number and variety of inservice teacher education activities offered by the Ministry of Education for serving teachers. As indicated below these serving teachers included both the trained and the untrained ones.

Instead of a few refresher courses for a handful of Primary School teachers, it became necessary for the Ministry of Education to mount the large-scale *Inservice Teacher Education Programme for Untrained Teachers*. As the number of primary schools and their enrolments increased, employment of unqualified teachers became necessary because output of qualified teachers from Primary Teachers Colleges was far less than the number of teachers required in these schools. By 1975 unqualified teachers numbered about 30,000 out of a total primary school teaching force of nearly 90,000 at that time, a ratio of 1 to 3.

Inservice Education Programs

The Inservice Teacher Education Programme for Untrained Teachers was spread over a period of two years and had five major components:

(1) during the first year, the untrained teachers went through a three-week pedagogical training at a Primary Teachers College during the April and August school vacations,

(2) in the second year, the teachers had further three-week academic studies at a secondary school also during the April and August school vacations,

(3) in between these residential components, there was a correspondence programme organised by the Correspondence Courses Unit of the Institute of Adult Studies at the University of Nairobi,

(4) a radio component was also specially prepared for the programme by the Education Media Service of the Kenya Institute of Education,

(5) before the successful teachers were awarded a Primary Teachers Certificate, they had to pass a centrally set and market academic examination and also obtain satisfactory grading in their practical teaching performance.

The radio and correspondence components of this programme are ably described in *Education for Development.* Proceedings of the XXIV World Assembly of the International Council on Education for Teaching, (1978), by Peter Kinyanjui who was then the Head of the Correspondence Courses Unit and is now the Director of the Institute of Adult Studies.

Because of shortage of funds, the Ministry of Education temporarily discontinued this programme in 1976 after nearly 10,000 teachers had obtained qualified status through it.

The one-year *Primary School Headmasters' Course,* established in 1968, was intended to strengthen administrative abilities amongst Primary School Headmasters, especially those who had recently been appointed to such posts.

The course, which was temporarily discontinued in 1974 due to lack of funds, included a residential portion at a Primary Teachers College in the April and August vacations, a radio programme and a written professional examination at the end of the year.

A third activity was the two-year *Crash Programme of 1964/65* which enabled about 300 primary school teachers to be upgraded and posted to secondary schools and primary teachers colleges to teach their respective subjects. During the two-year period, participating teachers were exposed to advanced academic and professional studies at Kenyatta University College where they stayed in residence for four weeks during each of the College's long vacation. They were also examined in their practical teaching of the two subjects of their training. Those who were successful were awarded the Ministry of Education's *S1* Teachers Certificates normally held by non-graduate secondary school teachers trained at the Kenya Science Teachers College and the Kenya Technical Teachers College.

A fourth activity was the *Subject Orientation Courses.* Like the previous Programme, these courses were also for teachers of the lower classes of the secondary school education. They were organised by subject Inspectors for

primary school teachers who had obtained advanced passes in the East African Advanced Certificate of Education examinations in teaching subjects. The teachers were exposed to three-week pedagogical sessions at the Kenyatta University College during school vacations. After satisfactory participation in these sessions over a period of one year, the teachers obtained the *S1* teaching certificates and were posted to secondary schools as indicated above.

A fifth inservice education activity is related to the East African Examinations Council. When this Council was established in 1966 to locally organise the East African Certificate of Education and the East African Advanced Certificate of Education, examinations for candidates in Forms IV and VI respectively in Kenya, Uganda and Tanzania, there were very few native teachers who were trained in the art of setting, moderating and marking national examination papers. Since its inception, and although it no longer examines candidates for these examinations from Tanzania, the Council established an *Examiners Inservice Course* through which an appreciable number of secondary school teachers have now been prepared in the various tasks of organising public examinations. The course is organised by the Council for new subject examiners in August of each year and each session lasts four weeks.

As the curriculum development activities of the Kenya Institute of Education expanded over the last decade or two, the Institute has, through a series of *Workshops, Seminars* and *Subject Panels,* worked very closely with subject Inspectors in training primary and secondary school teachers in the skills of curriculum development, experimentation and evaluation of teaching materials. The Institute's *Teacher Advisory Centres* have also been instrumental in associating serving teachers with KIE activities. There are two other inservice education activities organised by the Institute, namely, the 12-months inservice course for pre-school teachers and the residential 3 months' inservice course for radio teachers and script writers. The Institute is considering organising an annual six months' course for teachers and other technicians who will work in the Learning Resource Centres which are being established at Primary Teachers Colleges with a central one at the K.I.E. itself.

The annual five-week *Inservice Course for Primary School Teachers* is organised entirely by the Kenya National Union of Teachers for its members during the August vacation. The course is highly regarded and supported by the Ministry of Education. Participation in it, as is the case with other inservice education activities, would normally count towards promotion on merit from one grade to the next upwards.

As the secondary schools increased in number and expanded in size, and as the Primary Teachers Colleges are consolidated into fewer and larger units, institutional management problems have arisen. This has made it necessary for the Ministry of Education to consider establishing a machinery for training not only Headmasters of Schools and Principals of Teachers Colleges, but also for the training of the various educational administrators and Inspectors at the head office, in the Provinces and in the Districts. Because of the special nature of these problems, the Kenya Institute of

Administration, where public servants are trained in management, cannot cope with the Ministry's needs in this respect. It is therefore proposed that during the current plan period 1979-1983 a Kenya Education Staff Institute should be established to prepare personnel for the various tasks in educational management and supervision.

Recognising the need to intensify and co-ordinate inservice teacher education programmes, it is also proposed that during this plan period, a *Primary School Teacher Updating Unit*, should be established under the general guidance and control of the Chief Inspector of Schools, initially to plan, organise and co-ordinate all inservice teacher education programmes related to Primary school teachers, but in addition to eventually ensure that,

(1) inservice education courses are held regularly for primary and secondary teachers,

(2) such courses are co-ordinated with those organised by subject associations and cultural organisations because ideas emanating from these forums can be incorporated into the curricula of schools and teachers' colleges,

(3) priority areas for inservice education activities are identified and a comprehensive national programme designed to meet these needs,

(4) inservice courses are continually supervised and evaluated for the purpose of improving future courses both in terms of specific needs of different groups of educational personnel as well as for the effectiveness of the courses organised,

(5) Kenyatta University College is fully involved in Primary Teacher Education programmes, at both preservice and inservice levels.

In-Service Teacher Education in the U.S.

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During the decade of the 1970's, the inservice education of teachers has been one of the most frequent topics of discussion by educators at all levels of education in America. It was during this decade that for the first time, there was a surplus of teachers in many regions and in many teaching specialities. It has also been a time when the American public has developed an increased interest in the quality of American education provided for all its citizens – youths and adults.

The discussion, even debate, among some groups and individuals has frequently centered on emotional and political consideration for inservice teacher education. Such questions asked are, "who should control it; who decides; what is it; who delivers it; who pays?" These are questions that generate strong feelings on the part of all the interested parties: teachers, school administrators, college professors, school boards, state and federal agencies, and legislators.

More time, energy, and thought need to be devoted to "what is it?" How will it improve the quality of teaching and learning? What do we know about the teaching and learning process? What are clear concepts and definitions of what we are seeking? What are the facts? What are the training needs of individual teachers? How can we appropriately assess these needs? While these questions are not ignored, too frequently they give way to the more emotional and political questions which cannot be ignored, but which should not be allowed to dominate our entire behavior.

As evidence of the importance of the topic, the two major teacher unions, the American Federation of Teachers and the National Education Association, devote considerable attention to the debate and take strong advocacy positions regarding their constituents. Both organizations spend time, energy, and resources lobbying various individuals, groups, and governmental agencies regarding policy in this area. It is important to note that the two groups, at times, have differing points of view on specific issues.

There has been keen competition for control over inservice teacher education. Traditionally, higher education has been seen as the provider of most inservice work through continuing and graduate education. Not only do the teachers and universities want control, the states and local school districts

want it also. All would like the control, but no one wants to assume the responsibility for being accountable for outcomes.

While the debate continues, evidence has increasingly accumulated to support the importance of the topic, particularly when this evidence reenforces the belief that the classroom teacher is the most powerful single factor affecting academic achievement in American education. Particia Graham (1978), recent past director of the National Institute of Education, warns us that past obscurity which has guided us to spend millions of dollars designing "teacher-proof" materials, curricula, and programs can and must give way to acknowledging the efficacy of the teacher. What a teacher does in the classroom *does* make a difference. Graham points out that our past behavior seems to have been aimed at undermining that sense of efficacy, rather than building it up.

New Developments

Growing out of this debate is a number of developments and trends.

Millions of dollars are being spent on inservice education, no one knows exactly how much. Expenditures are being made by individual teachers to improve their skills but school districts, universities, and state education agencies are also expending funds.

All of the states have varying of requirements regarding continuing or inservice education, requirements for licensing and recertification of teachers. Many states and school districts have established teacher centers for inservice teacher education. The U.S. government now provides funds for a limited number of teaching centers.

Colleges and universities engaged in the preparation of teachers view inservice teacher education both as "boon" and "bane". Inservice education programs are as varied and as diverse as the nature of the institutions concerned. These responses have been seen as appropriate and inappropriate, substantive and lacking substance, having quality and lacking quality. Programs have been on campus, but mainly off campus in the field where the teachers reside and work. Colleges, in some instances, have been reluctant to move their faculties into the field and away from their counterparts on the home campus. Some colleges and private agencies have developed activities which are viewed as more entrepreneurial than of sound quality. In America, there is always some enterprising person who can devise a way, as we express it, "to make a buck (a dollar)." Inservice education has had to contend with this phenomenon.

Inservice Education Models

Drummond (1979) has described four models for delivering inservice education. These are as follows:

1. Provision-of-Service Model: People outside the faculty have services or

ideas that we need or want. They will appear with goods or services for a fair price (what the market will allow).

2. Job-Maintenance Model: Those in power, (the state, the school board, or the administration) have mandated or strongly suggested that I submit to remediation, update my knowledge and skills, or take a required course or courses.
3. Personal-Development Model: I feel I need a new lease on life to break out of my routine, to feel more in charge of my fate. I need to restore my energy, and my faith in people, to feel better about myself and my world.
4. Problem-Solving Models (three types): I am dissatisfied with my work. Things could be better; e.g., the quality of my professional life or service is less than satisfactory; my evaluation of results calls for improvement; my students are restless, hostile, impossible; parents and influential citizens are concerned, overwrought, threatening.

   Type A-Problem Solving, Outside-Linkage Model: We identify a problem or need with an outside-linkage person involved. As we move to solve our problem, we rely on outside technical assistance and expertise.

   Type B-Problem Solving, Situational-Learning Model: We are convinced: (1) that our school situation is fairly unique; (2) that most of what is known from research is situation specific; and (3) that we will have to learn how to solve our problems ourselves. As we work to solve our problems, we strive to understand better the situation.

   Type C-Problem-Management Model: We realize that our problem is unsolvable without changing existing relationships within the larger school system, as well as the behavioral norms of people in the organization's subgroups. As we work to identify and manage problems, we become more conscious of how our organization does work and how it should work.

The basic medium for delivery of services is almost exclusively the human person – the professor, the consultant, the workshop coordinator, a specialist – and, in many cases, this may be a classroom teacher. These persons usually are educational specialists, but frequently may be a specialist in other academic disciplines: they may be process specialists in group dynamics; they may be sociologists, or anthropologists, or scholars in sociotechnical systems.

Use is made of the traditional formats; e.g., courses, workshops, and classroom as laboratory. Travel – visits to observe other programs and teachers, to conferences and institutes – constitutes a considerable amount of the efforts in acquiring inservice education.

The lecture and printed material are, by far, the predominant modes of delivery of new knowledge; use of complex technology is minimal. The potential of telecommunications, two-way conversations and interaction, and use of instant retrieval from computers has not been put to use in in-service education. In the opinion of the writer, these media would increase the speed of dissemination, achieve new levels of quality, and achieve results not possible because of limits of current and traditional methods of educating

teachers.

The Research Base

A review of some 2,000 books, periodicals, and unpublished papers by Nicholson, et al. (1976), points up the confusion that exists in knowing how to achieve success in inservice education. The sophistication of these studies varies greatly. There is a need for more rigor in conducting such studies, the need for conceptualization, for clear definitions, and for propositions that can serve as guidelines for program development and evaluation.

Although it is developing slowly, there is an increasing knowledge base to assist researchers and program specialists. Useful empirical studies can be gleaned from the multitude of papers. Studies of beginning teachers in California and the studies from the Far West Regional Laboratory and the Institute for Research on Teaching at Michigan State University offer some leads at efforts to do significant research on such problems as teaching process, teaching style, teaching/learning style, and mastery of learning. A recent article by Borich (1979) points out a way of identifying teacher competence from an analysis of various process/product studies of teacher behavior and offers and approach to studying teacher competence.

Trends in Inservice Education

We can conclude that some trends are discernible, Cruickshank (1979) identifies four trends which are occurring in the inservice education of teachers:

> The first was a movement from a compensatory to a complementary view of inservice teacher education. At first, inservice education served a preservice function . . . Today's teachers are better schooled when they enter the classroom. Inservice education, rather than eradicating deficits, is seen as complementing and extending professional growth beyond the baccalaureate.
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> Secondly, there has been a progression from a discrete to a continuous view of inservice teacher education . . . there is no longer a distinct line between preservice and inservice education.
>
> The third trend has been a shifting from a relatively simple to a complex inservice teacher education operation. When compared with earlier practices, today's teacher inservice programs address a wider range of topics and problems and engage a more diverse and larger clientele.
>
> The final trend has been from a narrow control of inservice education programs by school administrators and university professors to collaborative governance, including the clients – teachers. The advent of stronger teacher organization and resultant negotiated teacher contracts probably contribute, in large measure, to this trend.

In conclusion, the study by Berman (1978), also known as the Rand Study, concludes that the most effective efforts for change take place close to the action; are concrete and teacher specific; are focused on practical problems; involve teachers in decision making; include classroom assistance; and have regular meetings that focus on practical problems.

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Inservice Teacher Education in the Eastern Caribbean

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I have chosen to speak about inservice teacher education in eight small territories in the Eastern Caribbean; new nations served by the campus of the University of the West Indies. I refer to Antigua, Barbados, Dominica, Grenada, Montserrat, St. Kitts-Nevis, St. Lucia and St. Vincent, many of which have been in the news recently. None, is more than 250 square miles; all, despite their limited natural and human resources, are endeavouring to offer at least ten years of education, mostly free, to all school age population, and to deal with the quantitative and qualitative improvement of their respective educational systems.

The educational systems in all these territories are engaged in efforts to broaden and revamp their curricula so as to make them more functional and relevant to the economic and social needs of these societies. They also seek to improve the quality and effectiveness of instruction, instructional materials, and the competencies and capabilities of the supervisory staff and of the teacher force in territories in which the percentage of trained teachers varies from 35% to 52%. Few of these teachers had more than 11 years of schooling before being trained.

Inservice Teacher Education in the Eastern Caribbean

Most of the teacher education in the Eastern Caribbean, is of an inservice, as distinct from a pre-service nature. Despite the fact that some of the most challenging developments in this region are taking place in those inservice programs which lead to certification at the end of one or two years, this paper will focus on the traditional notion of inservice education, i.e. the refreshment, renewal, upgrading, retraining and continuous improvement of the teaching force throughout the entire school system, in the post initial training situation, in response to changing needs, demands and orientations.

Inservice teacher education at the elementary and junior secondary level in the Eastern Caribbean has traditionally been the responsibility of the Central Education Department or Ministry of Education, with varying degrees of involvement by Education Officers and Inspectors, Ministry of Education Curriculum Specialists and Supervisors, Teachers' College Staff and practising classroom teachers, and increasingly, through considerable inputs from the School of Education of the University of the West Indies, Cave Hill Campus.

The tradition of vacation courses for the upgrading and refreshment of teachers is a long one in all territories, but it must be admitted that until recently, inservice training has been more or less ad hoc and inadequately planned. It has seldom focussed on the specific needs of specific groups of teachers over long enough periods. It is of limited effectiveness in the methodologies and strategies used to build up teachers' skills, to help them translate principles into practice and handle new interactions in the classroom.

These features of inservice programs have stemmed, in part, from the fact that there is an acute shortage of teacher training personnel with the necessary skills for the job. Few have adequate preparation for their role as change agents. There is also lack of the financial and administrative support necessary for the development of national inservice training efforts. To some extent international agencies have helped to remedy those deficiencies which result from the slender financial and personnel resources available to these national educational systems.

In fact, one challenge which we currently face in the Eastern Caribbean, is that of co-ordinating the activities of all these international agencies and integrating them with the activities of territorial and regional agencies working in curriculum development and inservice teacher education. But there is no doubt that these international agencies have added considerably to our capacity to develop curricula in Language Arts, Maths, Science and Social Studies, at the elementary and junior secondary level; to develop, evaluate and disseminate curriculum materials; to train larger numbers of teachers and generally to improve the quality of our inservice education.

One significant development has been the increasing centrality of first, the Institute, and more recently, the School of Education at U.W.I., Cave Hill, in every major curriculum development and inservice teacher training effort since 1970. Examples are the Caribbean Regional Science Curriculum Development and Teacher Education Project, the UNESCO Caribbean Project in Teacher Education and Curriculum Development, and the UNESCO Caribbean Maths Project. The School of Education, despite its limited resources has laboured relentlessly to help Governments and Ministries of Education appreciate that attempts to "install" new syllabuses and curricula must be supported by massive in-service training of teachers and that there is a sense in which inservice teacher education and curriculum development should be regarded as two sides of the same coin. In so doing, the School of Education has merely been fulfilling the outreach, service and developmental role envisaged by those who conceptualised it some fifteen years ago.

Linking Inservice Teacher Education with Curriculum Development

Much that is significant in inservice teacher education in the Eastern Caribbean in the last few years has taken place in projects, whether executed

by the local Ministries of Education and the School of Education or by those agencies in conjunction with international support. These are projects in which inservice teacher education has been deeply imbedded in curriculum development activity; where the opportunity is taken to link the development of new teacher skills to the development of new curricula and instructional materials. Our experience leads us to believe that there is great value in countries at our stage of educational development in linking the improvement of teachers' competencies and capabilities with such important features of curriculum development as writing specific objectives; diagnosis of pupil and teacher difficulties; task analysis; designing units of work and instructional materials, pupil workbooks, tests and other evaluative devices; testing the efficacy of these for pupils and teachers in pilot schools; evaluating, rewriting, and disseminating these curricula and materials throughout our school systems, paying adequate attention to inservice training.

For it is critical not only to update content or to develop better diagnostic instruments or improved learning resources, but to ensure that there are teachers who can use these effectively. We are persuaded that our attempts to link inservice teacher education with curriculum development hold out promise for helping us to uncover the limitations in the cognitive knowledge and conceptual understandings of a teaching force which is less than 50% trained; for helping teachers to develop more desirable attitudes towards children's learning difficulties, and in motivating them to understand, use, and evaluate curriculum materials. One thing which is clear is that it is useless to hand our teachers packages which they have not helped to develop.

Our most recent effort to link inservice teacher education with curriculum development is a regional project which was signed two months ago by Eastern Caribbean Governments, the U.W.I. School of Education and U.S.A.I.D. This project has as its main focus the development of Language Arts, Mathematics, Science and Social Studies curricula at the elementary level; the development of teacher and pupil materials, the improvement of teaching methods; the upgrading of principals and other supervisory staff so as to improve the efficiency and effectiveness of those key leadership personnel in carrying out their leadership functions, particularly in respect of inservice teacher education and curriculum development.

This project is significant in that it represents a regional attempt supported by an international agency to use and develop strategies, procedures and structures evolved by the regional university and territorial Ministries of Education, to develop not only curricula and materials, through a series of regional, territorial and local workshops, but to add momentum to human resource development in the Eastern Caribbean region. The outcomes of the project include, inter alia, the training and development of a group of teachers and supervisors with experience and skills in curriculum development, testing and dissemination. Teachers are trained to understand, select, use teaching strategies appropriate to the new curricula, including project work, child centred activity and continuous evaluation and dissemination of instructional materials produced by the project. Principals and supervisors gain improved administrative skills, especially as these relate to the facili-

tation of inservice teacher education and curriculum development in their institutions.

Some Challenges and Trends

It should be apparent that in the Caribbean we are working to improve the quality of the planning and implementation of our inservice education programs, and to make them more relevant and more productive, by regarding inservice education and curriculum development as different aspects of the same development thrust. As is implicit in the foregoing, some of the major challenges are:

(1) the need to develop national inservice teacher education programs which are better co-ordinated, conceptualised on a long term development basis, and comprehensive in scope; and which focus on evolving more effective strategies for attacking weaknesses and deficiencies in our educational system or stimulating further development. In particular, we face the challenge of co-ordinating the resources and activities of national and territorial agencies into a more effective national development thrust.

(2) the need for the necessary financial and administrative support for national inservice programs.

(3) the development of a cadre of persons, with the skills and techniques necessary for teaching adults; capable of planning, implementing and evaluating the effectiveness of inservice training, of accurately assessing and more adequately responding to the needs of teachers, principals, and other supervisory staff of a wide range of insights, training and experience.

But the signs are encouraging. Ministries of Education throughout the Eastern Caribbean region seem to be becoming more aware of the limitations of ad hoc, one-shot and inadequately planned in-service training: more curriculum and materials development units are springing up and more personnel are being trained to meet the demands of inservice education; we are moving gradually away from the idea that inservice education is only for the untrained and the weaker members, of the teaching profession: more teachers are being reached and the case for follow-up and evaluation of inservice training is at least being accepted. Moreover, some Ministries of Education are beginning to understand the necessity of releasing teachers from their jobs during school time to permit them to participate in inservice training programs.

The USAID project mentioned above will add a significant dimension to the management structures for our educational development projects in all our territories. For our Chief education officers cannot but benefit from the establishment of a Regional Project Advisory Committee, comprising all Chief Education Officers in the region; of a territorial Project Implementation Unit which will bring together a wide range of expertise in each territory from Ministries of Education, Curriculum Development Units, inservice

training centres, teachers' colleges, pilot schools and the School of Education, to hammer out the policy and programs of inservice teacher education for national development. A full-time Project Implementation Officer, will be responsible for the territorial co-ordination, implementation and monitoring of inservice education and curriculum development.

But this is not to say that the problem of making a significant improvement in the delivery systems of inservice education will quickly disappear. We continue to grapple with the problem of how to raise the level of insightfulness and effectiveness of those teachers and principals who do not participate in curriculum development projects, and how to ensure that we can fundamentally affect the skills and attitudes of those teachers and principals with whom we make contact only in the dissemination, as distinct from, the development process. Perhaps as important is the question of whether inservice teacher education will ever be really effective if it continues to focus on the individual teacher, rather than on the entire institution in which he works.

Without doubt, inservice teacher education stands to benefit from our attempts to evolve more effective strategies and to co-ordinate all our teacher education and curriculum development efforts. It seems to be as important, though, to ensure that teachers who are currently in training, whether in teachers' colleges throughout the region or in the University itself, are being adequately prepared to manage the teaching-learning transactions required by the new curricula. For it is not unknown for teacher training institutions to function as if oblivious to some of the main currents of development in inservice teacher education and curriculum development.

But it is questionable whether teacher education, in whatever form, will make a greater impact on national development, if educational administrators do not themselves regard it as a critical part of the national development strategy, and if it is not carefully interlocked with all aspects of educational planning and development. For in countries like ours, Ministries of Education continue to take administrative decisions and forge new professional directions in school systems without working through with teacher educators, the implications of these decisions and directions for teacher education. Teacher educators continue their operations often uninformed about the main currents of development being brought about by educational administrators.

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International Perspectives on Problems in Inservice Education: A Symposium

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1. Inservice education falls far short of being a high priority with governments at any level – federal, provincial, regional or local in Canada and the U.S. This is not to say that there are not aspirations towards establishing a high priority, or that there are not individuals or even individual school districts committed to its emphasis. Nevertheless, the commitment of human and financial resources is at a very low level – probably less than ½ of 1% at the national and provincial/state levels. What is even more disquieting, however, is the frequency of claims ascribing critical importance to inservice education while policies and priorities are left relatively unchanged.

2. In many countries including Canada and the U.S., serious jurisdictional disputes have arisen and will continue to arise over responsibility for, and authority in, inservice education. Planning and preparation of activities do not usually advance far before serious questions are raised, e.g. what is the

role of central authorities vis-a-vis local agencies; what assistance can local agencies expect without surrendering autonomy; what roles are played by the profession including the various associations representing professional educators and by the universities.

As the pressure mounts for granting higher priority to inservice education, the jurisdictional issues will become more critical. Many key questions may be resolved at the political rather than professional level unless educators can exert more influence.

3. There exists currently both in attitudes and operationalized programs a counter-productive, hierarchial mind set which actually implies that in-service education is for the next person and particularly for the one at the bottom of the ladder – the teacher.

Government officials rarely give much attention to their own inservice education and teacher educators have only recently begun to ponder the question of better, more realistic, and continuing professional preparation for themselves. Senior administrators and elected officials give the impression that they are more concerned with political manipulation of events and groups than they are with gaining expertize in policy formulation and implementation.

4. Many practitioners, perhaps most, consider inservice education as being totally different and set apart from pre-service education. They do not see the need for a conceptualized framework for programs, for a systematic and continuing approach to planning and implementation, and for any co-ordination with pre-service programs. The cry is raised for "relevancy" and for meeting the "needs" on the spot rather than receiving "more theory". What one sees, then, is "nuts and bolts", "hit-and-miss" and "one-effort" activities.

5. Many approaches by educators reflect reliance on folklore and myths from the past. Practices continue because they are familiar and popular. They are based on views which are only partially correct or which are situation-specific. Examples of these half-truths include – "only the teacher can identify inservice education needs", "one day or a few hours on an occasional basis are adequate", and "inservice education is an extra activity beyond assigned responsibility."

6. There is a continuing debate about terminology and much confusion regarding precise meanings for such terms as *staff-development, professional development, continuing education and inservice education.*

7. The evaluation of inservice education activities is limited, for the most part to brief surveys of participants' reaction during or at the completion of the activity. Few attempts have been made to ascertain the effect of the activity on post-behavior of the participant.

Mbiti

1. Many developing countries are faced with an endemic problem of shortages of trained teachers in their primary schools. There is, therefore, the ever-increasing demand in these countries to devote available financial resources to pre-service teacher education. Very few countries are able to

reach a 100% target of trained teachers owing to the fact that their population growth rates are very high. Consequently the quantitative expansion of schools creates teacher supply demands which outstrip the annual supply of trained teachers.

2. When this problem is contrasted with the need for inservice education for practising teachers, and when it is realised that every practicing teacher needs to be kept abreast of the ever-changing curriculum demands, there occurs the obvious problem on the part of governments in establishing priorities. Where should limited financial resources be utilized, in pre-service or inservice education? If one should establish an ongoing inservice teacher education program, when will the teacher trainers, who are already overloaded with their normal teaching duties in the pre-service program, find time and dedication to do the job?

3. If one should adopt distance teaching approach methods, such as radio, TV or correspondence programs, how does one adequately cope with such rural environmental problems as: motivation, lack of electricity or radio batteries etc.

4. How does one evaluate the programs? A major problem relates to the whole question of identifying priorities in terms of the curriculum? Which subjects must receive attention first and why? How does one identify skill difficiences in each subject area?

5. If one is to avoid the obvious temptation of organizing unstructured, irrelevant, uncoordinated programs, how can one effectively get the maximum degree of participation from subject experts and classroom teachers and how does one identify these experts?.

Maia

1. Inservice training sometimes takes the place of pre-service training. Thus, the problem is misplaced. In other words, some retraining might not be necessary if the original training were done properly in the first place. There is an argument for concentrating efforts on better pre-service training than on retraining. To a certain extent it is true that teachers have to be updated in methods, techniques and content (especially at the higher levels) as well as learning how to cope with innovations and social change. But, I insist that retraining should not and cannot take the place of sound pre-service training.

2. Teachers in general receive low salaries and the profession is not held in high esteem. It lacks social prestige. In fact, it could be said that many teachers deserve what they get since they themselves are often the major obstacle to inservice education.

3. The fact that women outnumber men in the profession is a negative factor. In fact, culturally and historically, women undertake teaching not to support a family but as a supplementary activity. This has negative implications for the training and retraining of teachers.

4. Inservice education cannot be the sole responsibility of government or private agencies but should be an outcome of joint efforts.

5. Difficulties of modern universities in devising inservice education

programs can be summarized as follows:

Problems related to:
- input
  - increasing demands
  - lack of means
- process
  - deficiencies in teaching
  - deficiencies in research
  - inadequate relations with the community
- output
  - unfitness in the labor market
  - deficiences in evaluation

Avveduto

Inservice education is critically important because it is, in a general way, the main goal of education. The usual answer to the question about the main purpose of education is that it is the full development of the human personality. This is, of course, true, but it is not sufficient. What is really meant by the "full development of personality"? In my opinion it means to keep people able to discuss *everything, everybody, everywhere.* In this sense, the role of inservice education (a kind of continuing education) is essential. The impact of modern industrialized countries is a very heavy one because of a one-way flow of information from the main source of power, the rule-makers of today's society, to the people.

In this framework, the teacher has the important task of discussing, every day, himself, his role, his ideas and so on, and transmitting this attitude to the pupils.

Through inservice education then, it will be possible for the teacher to bridge a dangerous gap, to face what I call the "two generations-back" law. In fact, we receive, at school, information, attitudes, values from our teachers that, in a general way, are the same that the teachers received from their teachers, so we transmit a set of values of two generations back.

Inservice education, should play the crucial role of helping the teacher understand the society in which he lives and understand the new values of the younger generation which are generally in dispute with the values of older generations.

Now, how can one reach this difficult target? My answer is- through the university. In fact, since the university trains the teacher, the university must also retrain the teacher. At best, inservice education is a research program and as such, it requires the essential participation of the university. Therefore it is possible to divide the inservice education field into two main sectors.

The first concerns the inservice education for teaching in the primary and lower secondary schools, and the second, the teaching of the upper secondary school. The main difference between the two sectors is that the first requires specific methodological skills while the second a wide sociological consciousness. My idea is that it is much more difficult to teach in the pre-primary, primary and junior high schools, than in secondary schools or in the university. So the teacher of the first level must have and continue to obtain a highly sophisticated methodological training, while the teacher of the

upper level needs a general sensitivity to the mood of contemporary society. For both, of course, the presence of the university in an advanced inservice education program is essential.

Champatong

1. In 1978 the Ministry of Education of Thailand introduced the new elementary and secondary curricula which affected the elementary and secondary schools throughout the Kingdom. Basically, the new elements are the emphasis upon work experience and character development, the integrated approach to the teaching of social studies and science, and the emphasis on flexibility and diversification of programs to encourage self-exploration particularly at the secondary level.

As it would be expected, since the implication of the new curricula would be nationwide, those who are directly involved in the process of change are classroom teachers, school supervisors, school superintendents and teacher educators. It would be through these change agents that the new curriculum messages would reach the school children. Our problem was how far these change agents, especially the classroom teachers, would be professionally committed to the innovative changes in the curricula. This problem would become one of the key issues in the process of curriculum change for many years to come.

To cope with the challenge of the task, the Ministry had prepared a core of key professional educators, school teachers, school principals, school supervisors and teacher educators to be involved from the beginning in the designing of curriculum materials. Teacher education institutions were brought into the process in the initial stage because such early linkage would help the teacher education institution in introducing the new curricula into their teacher education programs, thus performing the preservice task for their student teachers.

Nevertheless, the basic task is the inservice training for the teaching force. The original plan of the Ministry was to provide inservice training to all the classroom teachers but this would generate too high a cost. With the financial constraint, a new plan was devised in three stages. The first stage was to train a core of teacher educators who would eventually train the school principals. This core of teacher educators from all the teacher education institutions were given a three weeks training on the new curricula and then they would return to their own institutions to provide a training course for selected groups of their colleagues. As a consequence, by the second stage, a total of approximately 1800 teacher educators would conduct inservice training courses for the school principals and a selected number of classroom teachers in their districts. The third stage was for the school principals to organize inservice programs for their teachers. This last stage, though a necessary process, was left to the voluntary act of each school principal. In order to maintain standards, the Ministry produced a package of teacher guides, curriculum plans and other necessary curriculum materials for the organizers of the inservice training programs. In addition, an orientation program was given to regional and provincial

school supervisors, school superintendents and higher education institutions' representatives with the view to closer coordination in the curriculum implementation process.

2. From the foregoing description of the implementation process, some shortcomings were found. First, the inservice training as planned by the Ministry did not cover all the target groups. A large proportion of the classroom teachers were left to the care and attention of their school principals who might not perceive significant benefits from the new curricula. In reality, the classroom teachers are those who would affect changes in the teaching-learning situations, but under the circumstances, have not been directly exposed to the new curricula. Secondly, the three stages of inservice training, whereby one lot of teacher educators, after receiving training, passed on what they have learned to the school principals who in turn passed it to the classroom teachers, is bound to be diluted process. Thirdly, a number of classroom teachers, especially in the far remote rural schools, have not received any inservice training with regard to curriculm change.

3. On the credit side, however, the Ministry's choice of the staff of the teacher education institutions, the school supervisors and the school superintendents has a positive effect in the implementation process and in the linking up of the teacher education institutions with the schools. The impact on the teacher education institutions has brought about closer working relationship between their staffs and the local school teachers.

4. Since the curriculum change is rather drastic to many classroom teachers involving the changing of concept, perception and philosophic outlook, it would be doubtful if the process of behavioral change can occur readily. It would be a high expectation to produce such a change in a so short time. In our own teaching profession, it must be admitted that many of the teachers are not innovative in practice, and indeed, if anything, they are a conservative force and thus one cannot expect them to change overnight. This should remind us that the crux of curriculum content, instructional materials, teacher guides and utilization of new technology, is the changing of teachers' perceptions, philosophical outlook and behavior in the classroom. The process of such changes depend largely on the receptivity and adaptability of the individual teachers. Perhaps life-long education for teachers will be needed throughout their careers.

Leskiw

In summary the panel has touched on general problems of inservice education, on problems of priority at the primary level, on philosophical issues regarding the very purposes of education itself, and on problems of introducing curriculum change.

In closing the panel would support the following principles as advice to those devising inservice policies.

1) All individuals and target groups should have access to a systematic, long-range program of inservice education.

2) All major participants in inservice education must have a voice in policy formulation; school districts where these exist, the teaching profession,

higher education institutions, and Ministries of Education.

3) Inservice education is vital to the effective operation of each educator, the teacher, administer, university professor, and Ministry officials. However, needs are distinctive and appropriate intervention points must be identified to design, fund, deliver and evaluate inservice education programs.

4) It is desirable to view inservice education as a continution throughout the professional careers of the preparation initiated in pre-service programs.

Section Three:

RESEARCH AND DEVELOPMENT BASES FOR EDUCATIONAL INNOVATION

A sound research base for directing innovation and change in education is essential. KIDA's paper on educational research in Japan provides a detailed picture of how an advanced industrial nation establishes an extensive research and development base for its large educational system. Next, LEE deals with the need for innovation in education, especially in teacher education, and cites examples from Korea.

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Educational Research in Japan

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Thirty Years of NIER

The National Institute for Educational Research of Japan, of which I serve as the Director General, was established in 1949. It is under the jurisdiction of the Ministry of Education and fully financed by the national budget. it is not a part of the Ministry of Education but an independent institution, like a national university, to conduct practical and basic research in education.

It was at the time of radical renovation taking place in every field of education throughout the country when the Institute was established. The Government formulated a policy that the innovation and expansion of education is the pre-requisite for reconstruction of the Nation, and ventured new measures such as reform of the school system, extension of compulsory schooling period, introduction of co-education system of learning in the midst of economic exhaustion after the war. In implementing these educational renovations, the Government put strong emphasis or implementing these innovative measures on the basis of understanding of actual situations gained through educational research.

In order to implement these measures, the Ministry of Education established a strong Bureau of Research and prepared to conduct education surveys and statistical projects by itself. The Boards of Education Law decreed that the secretariats of prefectural boards of education shall each have its own section for education surveys and statistics. Establishment of education research institutes by local boards of education was strongly suggested.

National institutions of higher learning for teacher education were established, one in each prefecture. Eight of the most prestigious universities including Tokyo University had their Education Departments so that education research could be conducted systematically at the university level. These were the measures which reflect the strong interests of the Ministry in promoting educational research at that time.

A firm policy to establish an educational research system for the promotion of educational innovation was adopted. There might be an assumption that the establishment of a national institute for educational research would be a logical consequence of this policy. In reality however, heated discussions were held whether the Ministry should establish an education research institute within its jurisdiction in addition to education departments at universities. There was a clear and strong voice against the establishment of such a national organization. On the one hand it was argued that educational

departments at universities should be more than enough to conduct pure scholarly education research. On the other hand, training of administrative or educational staff by the Ministry itself should be given top priority if it were to implement exactly the educational policies of the Ministry. No specific reason could be seen to establish a national institute for educational research by the Ministry.

After all, the National Institute for Educational Research, (NIER), was established just thirty years ago at the same period when the educational departments were established at the prestigious national universities. The decision to create NIER was political and farsighted in that the freedom of research at universities might lead to difficulties in implementing practical and empirical research in education. At the same time, it was judged that it might also be difficult in the inner organization of the Ministry to conduct scientific and objective research.

NIER was inaugurated as an independent institute under the jurisdiction of the Ministry of Education, which aimed at conducting high standard practice-oriented research using academic and scientific methods.

If you look at the titles of research projects the NIER conducted after its inauguration, you will note that they aimed to meet the administrative needs of the time.

From 1950 onwards for example, immediately after its establishment, NIER conducted a "Survey on Elementary and Lower Secondary Curricula" which aimed at evaluating objectively the contents and teaching methods that were used after the war.

After 1945, the content of elementary and secondary education was radically changed and individual school initiatives with regards to curriculum development were strongly encouraged. The Courses of Study presented by the Ministry, introduced a new subject area called 'Social Studies'. The state textbook system was abolished and instead textbook authorization system was introduced by which the Ministry approved textbooks edited and published by private publishing companies. Schools could select one specific textbook among several of approved textbooks. It should be pointed out that an important role of an educational research institution is to evaluate the outcomes of such radical changes of education. Between 1952 and 1955 NIER conducted a 'Survey on Scholastic Achievement of Elementary and Lower Secondary School Children'.

To cite another example, the reform of the educational administration system took place after the war by means of introducing the board-of-education system. This drastic change replaced a centralized education administration system by a local autonomy system of decentralization. Prior to the formulation and implementation of this reform, NIER conducted several research projects such as a "Study of the System of Boards of Education in the United States" or a "Study on Appropriateness of the Establishment of Boards of Education in Relation to the Population Size of the Municipality," so that the outcomes might provide references for policy formulation.

Ten years up to 1955 were the years of rapid economic development in

Japan. It was the period in which took place the promotion of education reconstruction by developing independent national education policies. The curriculum was completely reviewed and revised to suit national realities. Moral education was emphasized in the school curricula and the improvement of school facilities and upgrading of teaching staff were promoted. The number of upper secondary schools was remarkably increased in order to meet growing demands of the so-called boby-boom generation for upper secondary education. These were the important major policies implemented during the period.

During this time, NIER conducted a "Study on Moral Education and Measures to Improve It", "Comprehensive Research on Relations between Educational Environments and Scholastic Achievements", "Basic Study on the System and curriculum of the Upper Secondary School", and "Empirical Study on the Teacher Training System". It also started study projects to compare educational issues with other countries.

NIER has great strength in the field of comparative education in Japan and its staff members concerned are of first quality. In addition to experts in education of western countries, we have experts in education of Korea, China, India, ASEAN countries in our institute. NIER also began to cooperate with the International Association for the Evaluation of Educational Achievement, and conducted an international survey on achievements in Mathematics and Natural Science during this period of the early sixties.

The period from 1965 until the present is the period of full bloom for the results of the educational reforms implemented immediately after the war. At the same time it is a period of review for new developments in education in order to advance to the next stage.

One of the most characteristic features of the period is the emergence of mass education at the higher education level. A diversified structure of university education was introduced and a new grant-in-aid system was developed for private institutions of education which have a large share in higher education in Japan.

In responding to these educational issues of the period, NIER conducted projects such as a "Comparative Study on Higher Education", a "Study on Public and Private Characteristics of Private Institutions of Education", and a "Study of Structures of Postgraduate Schools". Also a compilation work of the modern history of education was undertaken, in which the hundred-year history of our modern education since the Meiji Period was carefully scrutinized. Ten volumes of the History were published by the Institute. It was this period that NIER inaugurated its Unesco-NIER Regional Programme for Educational Research in Asia in collaboration with the Unesco Regional Office for Education in Asia.

Besides NIER, there are many educational research institutes throughout the country and every institute is contributing, from its specific standpoint, towards the development of educational policies and the improvement of education in the country.

Overall State of Educational Research in Japan

The number of the institutions and organizations which are involved in research, survey and inservice training in the field of education totals 960. These include universities, junior college, research institutes and academic societies.

The functions of education administration agencies in research are generally understood. They include collection and processing of information, production of and statistics needed for educational administration and policies, surveys of state of educational activities, confirmation and evaluation of outcomes of administrative measures and policies. These studies are of immediate need by administration. There exist more than 500 independent educational research institutions throughout the country, either in public or private status.

First of all, I have to refer to research institutions under the national government. There are four institutions in addition to our NIER. They are the National Institute for Special Education, the National Training Institute for Social Education, the National Centre for University Entrance Examinations, and the Development Centre for Broadcasting Education. NISE, National Institute for Special Education, has an attached school to provide education for the heavily mentally or physically handicapped children. The institute conducts research not only on education for the blind and deaf but also education for mentally retarded, physically handicapped, emotionally disturbed, multiple handicapped and physically weak children. At the same time, it organizes professional and technical inservice training courses for staff members in the field of special education.

The National Training Institute for Social Education is an institution to provide inservice training courses not only for social education officials of education administration agencies but also for leaders of social education in the private sector.

The National Centre for University Entrance Examinations is an institution to deal with the preparation of test papers for an achievement test which is the first stage of the entrance examination for national and public universities, and marking of test answers. It was established in 1977. The Development Centre for Broadcasting Education conducts studies on broadcasting programme development and instructional methods through broadcasting so that it may contribute to the development of university education through broadcasting.

In addition there are 79 educational research institutes administered by 47 prefectural governments and around 400 education research institutes maintained by municipal governments, numbering nearly 3,000. Major tasks of these institutions are to provide assistance and inservice training programmes for school teachers, to provide educational counselling services for the public, and to conduct research and surveys as the basis to implement these two activities.

The activities of these local educational research institutions are contributing, jointly with school authorities and school teachers, towards the enhancement of educational standards of the country by means of the betterment of daily educational activities at school, improvement of instructional methods, and upgrading of teacher qualifications.

These institutes of educational research formed a voluntary nation-wide network, having NIER in its core, called the National Federation of Educational Research Institutes of Japan. Through this network, local institutes conducted jointly cooperative research projects and promoted exchange of outcomes of their research projects. There were only 27 member organizations at the beginning, but 30 years after today more than 200 educational research institutions are affiliated to the Federation. So far, the Federation has conducted 16 nation-wide research projects including, "Study on Improvement of Instructional Activities", "Study on Education and Attitudes of Working Youth", "Study on Family and Children", "Study for Systematization of Education", "Study on Classroom Activities in Relation to Development of Learning Abilities".

Dissemination and Utilization of Research

The outcomes of research are made public in the form of reports. In addition, during the course of seminars and study meetings of various kinds researchers can present their views gained through research activities. Researchers are also invited to participate in various councils, committees, and meetings both public and private in nature, and are given opportunities to submit their ideas and views derived from outcomes of their research activities. In these ways, the outcomes of research penetrate into the field of education and will be utilized for the formulation of education policy. Direct and immediate effects of educational research cannot be expected, but through the better understanding of the outcomes of research on the part of educationists, it can be expected that an atmosphere to accept the outcomes will be created and consequently the outcomes will influence the development of education.

The National Federation of Educational Research Institutes of Japan is playing an important role in the dissemination of research outcomes. The exchange of outcomes is encouraged among member organizations, by which utilization and diffusion of research outcomes are promoted nationwide level. Dissemination of research findings is also being done internationally.

International Dissemination of Research Results

Asian countries have developed an Asian Programme of Educational Innovation for Development, called APEID, under the framework of Unesco activities, and one of its major programme activities is to strengthen exchange of information and experiences in educational innovation among member

countries. NIER is one of its Associated Centres and it organizes three or four regional workshops and seminars a year. It thus helps to improve curriculum development, develop science education, promote moral education, and strengthen educational research activities in the Asian region. The exchange of information in these areas is one of the outstanding features of the programme. Early June of this year NIER organized a regional seminar on educational research in relation to education reform, inviting one outstanding leader from each Unesco Member State in Asia and Oceania. This was a joint venture with Unesco.

In addition to Unesco, OECD as an international organization is also promoting international educational cooperative projects, to which our institute is also participating. IEA, International Association for the Evaluation of Educational Achievement, is a wellknown organization producing useful data through its international surveys. NIER is its national centre in Japan and many new ideas and information are provided Japan through the network of IEA.

A general assembly of the World Council of Comparative Education Societies will be organized in Tokyo from 7 to 10 July 1980. Prior to the Tokyo meeting, the World Council will organize jointly with the Korean Society for Comparative Education, a pre-congress symposium for two days in Seoul. Neeldess to say, educational research has great relevance, both nationally and internationally, to educational development.

Research Planning and Implementation

Several points of consideration for planning and implementing educational research emerge in my mind.

First of all, if the research and surveys are to be credible, procedures must be scientific enough to resist criticism. The researcher should possess deep insight in to educational affairs and be far-sighted so as not to misjudge the selection of research themes.

Educational research needs a certain period of time for planning, implementation and reporting on the one hand and the decision-making of education policy is to be, generally speaking, made as quickly as possible on the other. It is imperative, therefore that both of educational researcher and policy maker have wider eyes of foresight on the trend of education in future. The importance of comparative study of education, locally and internationally, is rightly due to this factor.

It is needless to say that the researchers to engage in educational research activities are always requested to develop one's own quality. Furthermore, it is also his another duty to make his best to upgrade general standards of educational research by means of cooperation of researchers, nationally and internationally.

The global society is shrinking year after year. Educational affairs were once considered as local or national affairs, but nowadays educational activities in any countries are to be examined under the joint efforts of inter-

national cooperation. It is the reason why we are here today. The educational activities and educational research in one specific country are now being considered also useful experiences for other countries and such a flow of experiences is badly needed internationally. I believe this is an era where close cooperation between educators beyond national boundaries is strongly needed. Educational research can help achieve educational development anywhere as mankind moves towards a truly global society.

Innovations in Teacher Education

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It is a truism that the quality of teachers is a key factor in determining the quality of education. Hence, the importance of efforts for improving the quality of teachers can never be overemphasized. But in a modern society of dynamic change, these efforts are handicapped by the growing complexity of problems plaguing today's education.

There emerge myriads of new forces, which give rise to a variety of roles education must assume; the increasing social demand for education on the part of massess of people, the explosive increase of new knowledge, technological innovations, value conflicts, the growing gap between technological and social developments and the increasing amount of dehumanizing forces inherent in the educational process, all argue for a dramatic shift of emphasis in education. The need for intellectual development based on creativity and scientific ways of thinking, a high standard of morality, and the ability for a rational decision-making have become so acute that there is no avoiding these new challenges.

The public seem to indulge in an illusion that the present educational system can serve its functions efficiently as demanded by its new social context and they take it for granted that most of these responsibilities rest upon teachers. Taking a close look at the reality, however, this assumption is found to be misleading. The rapid change in the social context has imposed roles upon the educational system beyond its ability to manage. Quite often, the public dissatisfaction with education seeks its outlet in finding fault with teachers, as if they were responsible for all educational services. While too much is demanded of teachers, there are many constraints which militate against effective teaching. The relatively unlucrative salary schedule of teachers adds to their frustration with the teaching profession, with the resultant loss of a sense of commitment. The low competency of teachers and the unfavorable conditions for teaching are following a vicious cycle, from which there is no easy escape.

Bearing this background in mind, the purpose of this paper is to examine the problems related to teacher education and give direction to needed innovations.

Expectations of the Teacher's Role

In referring to a teacher, Koreans have traditionally used the word

"Susung", which is somewhat distinguished from what "Teacher" generally implies. Although translation cannot do justice to its specific definition, it might be possible to describe its meaning in general terms. There are several dimensions to be considered in defining it; it means a possession of a wide base of knowledge; "intellectual abilities" or "wisdom" which excels others; and moral integrity. In particular, it connotes a teacher as a model of behavior for learners to pattern after, with a strong sense of commitment to the calling they are destined to serve.

Writers have identified some of the psychological roles of teachers in working with children as follows: representative of society, judge and screener, source of knowledge, helper in the learning process, referee, detective, object of identification, limiter of anxiety, ego-supporter, group leader, parent surrogate, target for hostility feelings, individual friend and confidant, and object of affection and crushes. The latter is more descriptive of a teacher's role than the Korean term, but the role and the quality of a teacher which both imply are more or less the same. The image of a teacher as indicated in the two descriptions has remained very much the same over many centuries and it will continue to exist in the future. It is extremely difficult to expect today's teachers to embody this image of teachers which has been cherished so long.

When educational opportunity was limited to a small number of children from the upper class, the teacher was held in high regard as representing a small island of excellence in a sea of mediocrity. In most cases, the number of pupils taught by a teacher was small enough to permit face-to-face tutoring. This situation is hardly conceivable in the common or popular education as seen in the contemporary world.

The population has increased in number and this trend will continue. "Better education for more people" has become a popular catchword triggering the drive for the universalization of education. This trend lowered the elite status of teachers to that of a common and unattractive profession. The size of a learning group has been increased to such an extent that a teacher has to teach an unmanageable number of pupils.

Furthermore, the proliferation of new knowledge has overloaded the amount of content to be taught, and the need for developing intellectual ability has become more acute. Also, we can not deny that the extraneous forces which threaten to divest man of humaneness are gaining prevalence within and outside the school, at a time when the public is ardently voicing the need for moral education. To demand impeccable morality of teachers in this situation is asking the impossible.

It may follow that all these changes did much to deteriorate education quality, while deepening the chronic shortage of teachers. These problems compelled the concern of educators for educational innovations throughout the world. We all have a firm conviction that the upgrading of teacher quality is the master key to the success of educational innovations. Therefore, the importance of devising policy measures for improving teacher education can never be overemphasized.

Phases of Teacher Preparation

Teacher education in general comprises five phases; namely (i) recruitment (ii) pre-service training, (iii) certification, (iv) placement and (v) inservice training. "Who is selected" is the first question to be addressed. An answer to this question is important because the selection of students with the potential of becoming a good teacher will increase the effectiveness of the teacher preparation program. In most countries, high school graduates enter into teacher training colleges and their previous education has already shaped much of their character. Given this fact, it is too much to expect teacher education institutions to concentrate on changing the personality structure of teacher candidates thrcugh the limited period of training. It is for this reason that the selection procedure for entry to teacher education programs has the growing attention of teacher educators.

The common practice of selection has been to overemphasize general intelligence and achievement levels, with much less emphasis, if any, on the professional aptitude of teacher. In addition to improving the selection procedure, consideration should be given to devising incentive measures that will induce promising students into teacher training colleges.

The second phase of teacher education is pre-service training, whose duration varies from country to country. There is a world-wide trend to extend the duration of initial preparation. In Korea, the preparation of primary school teachers had been the responsibility of the normal school until it was promoted to the status of junior college (grades 13 and 14). A plan is now being made again to extend the course duration to four years.

There is no reliable empirical evidence measuring the impact of the duration of teacher preparation on the quality of teachers. Considering the initial preparation as a major means of ensuring professional success, however, it is hard to understand why the duration of teacher training program should be shorter than those for the lawyer, doctor and minister.

In this connection, I shall give an example of the training program for primary school teachers in Korea. It is a two-year post-high school program, which is jammed with the four major courses of liberal arts education, professional education, subject matter education and practice teaching. The two-year course is by no means even a bare minimum. Cognizant of this problem, the Government is considering a plan to remedy this situation by upgrading its program to a four-year one.

As we are well aware, "what and how to teach" has been the question of our major concern in teacher education, but we have not reached a consensus regarding the answers. Another controversial issue concerns the relative weight given to liberal arts education versus professional education. The curriculum emphasis between the two may vary, depending on one's point of view. Those who emphasize character-building will argue for liberal arts education, whereas those considering the professional skills of teacher more important will argue for professional course. The debate on this issue has

much to do with the duration of initial preparation. Given a long duration, it would be ideal to build professional skills on the broad foundation of liberal arts education. Given such a short time of preparation, however, an immediate concern may be with the provision of bare minimum of professional knowledge and skills. At any rate, judgement on this issue should be made in relation to what is demanded by the society.

Another important issue of teacher education which deserves our special concern is internship or student teaching. Again, the profession of teaching is well contrasted with other professions such as law and medicine in terms of time devoted to internship. In most cases, practice teaching lasts only a few months, resulting in the appointment of unprepared teachers, and this is the very factor that impairs the effectiveness of education.

What we now call certification is a kind of social recognition that a student teacher has met certain requirements and is capable of teaching children. The requirements are manifested in the law, and in some cases the law specifies even courses required and time allotment. Since the law has biding force, it exerts so profound an impact on the program of teacher education, that it may be considered an important determinant to the quality of teachers.

Placement is perceived as the process of linking the outputs of teacher education to the recipients. It is important because it is at this stage that we come to grapple with the issues related to equal access to quality education, regional disparity and job satisfaction.

The conditions of schools vary widely and new teachers have different preferences as to the school they wish to work in. In view of these differences, placement has much to do with a teacher's morale and education quality in the long run. It is imperative that a fair and effective placement system be devised to prevent problems related to job dissatisfaction and ineffective teaching.

Lastly, the inservice training of teachers is another important component of teacher education. This training is need-based, since it is offered after a teacher is more or less experienced in teaching children. Educators have set forth the objectives of inservice training as (i) to remedy and repair omissions and weakness of collegiate preparation; (ii) to refine and/or enlarge the scope of existing competencies; and (iii) to support innovations or to test new curriculum, methods and materials of instruction.

As clearly stated in the aforesaid objectives, there is no denying the value of inservice training as a means of providing for continuing growth in the profession. Despite this fact, inservice training is not given full attention by many teacher educators as well as policy-makers.

Innovative Efforts in Teacher Education

As the social context was undergoing rapid change, the need for innovation in teacher education has become more acute. The innovative movement in teacher education started in the late '50s and gained momentum in

the '60s in both developed and developing countries.

A continuing stream of innovative efforts has produced many new ideas. It might be worthwhile at this point to sketch their implications for teacher education, although what follows is not exhaustive of all innovations that have taken place.

The utilization of multi-media appears to have important implications not only for education in general but for teacher education in particular. The use of broadcasting media led to the introduction of remote-learning programs. As the utility of these media is empirically validated in various educational programs, they offer a great degree of application to teacher education. A new teacher is placed in a situation where he or she has to a handle slide projector, film projector, overhead projector, opaque projector, VTR, etc. The skills of handling hardware have become an essential part of teaching competency.

As the concept of educational technology advanced, teacher education came to concern itself with the use of software (programs) particularly in instruction. A discussion on the introduction of educational technology makes it necessary to introduce individualized learning. Originally developed for pupils, this approach can contribute towards the upgrading of teacher education. Equally applicable to teacher education are self-contained materials such as programmed materials and modular materials.

Another significant innovation recorded in teacher education was the introduction of micro-teaching, a revelation of growing concern for the development of specific professional skills.

Not to go unmentioned in this connection is the so-called performance (or competency) based teacher education usually expressed in abbreviation form "PBTE." It represents an attempt to define and specify competencies required for entry into the teaching profession. In this sense, it makes a clear departure from the conventional practice of describing competencies too ambitiously and ambiguously. The certification practice in use by many countries is that the Ministry (or Department) of Education expresses certification requirements in terms of courses required and time devoted to practice teaching and no arrangement is made for the evidence that the student teacher is in possession of the specific competencies. Since the absence of clearly defined learning outcomes has been a cause for the slow improvement of teacher education, PBTE appears to have a great potential to contribute towards better teacher education. Yet this approach contains many problems to be solved before it can really contribute to upgrading teacher education practices. The most serious problem is related to the lack of consensus regarding competencies teachers must possess. Even though these competencies are identified, there still remains a problem of establishing the priority of competencies. There is no sufficient amount of effort being directed to finding solutions to these problems.

Innovation in teacher education cannot be considered in isolation from education in general. There have been many educational innovations in almost every country since the 1960s, but many have not been successful. The most common failure has been in the process of diffusion and settlement.

No matter how well a new program is conceptualized, there is no guarantee of success, when they fail to gain a foothold in actual situations.

I submit that teacher education consitutes a critical factor in diffusing an innovative program. To reinforce the point, educational innovation is impossible without effective teacher education responsive to new needs. Given the fact that pupils are the target audience of an innovative educational program, teachers are considered a powerful intervening variable. We have seen many new programs bypassing teachers in the rush to get new materials to reach the target audience.

In order for a teacher training system to be responsive to new needs, the training program itself should be oriented to develop the sensitivity of future teachers to a higher awareness of problems and a sense of responsibility. Preservice training is not a sufficient condition for meeting these needs and there arises the need for a complementary function of inservice training of short duration. While the former is important as an initial preparation for foundation building, the dynamic nature of modern society attaches equal importance to the latter.

Concluding Observations

In the foregoing, we have examined the extraordinary responsibilities resting upon teachers, the problems besetting teacher education and innovative efforts which have been made to solve them. It was also pointed out that, despite the vigorous efforts for innovation, their impact on education quality is far from satisfactory.

On the basis of my observations, I wish to highlight some points which deserve special attention in working toward innovation in teacher education.

Firstly, as the rapid change in the social context presents new challenges to education, the need has become acute to make an extensive assessment of the competency requirement for entry into teaching profession. This undertaking is of such a magnitude that it cannot be performed by teacher educators alone but requires the participation of people representing various disciplines and in all walks of life.

Secondly, a needs assessment should be made to define what are demanded of teachers in relation to what the teacher training college can actually achieve and to clarify the substance of the gap between the two. Efforts should be made to search for measures to fill up this gap.

One important measure would be to provide all possible aids for teachers. Such aids cover the whole gamut of teaching-learning materials and facilities designed to free teachers from labor-intensive conditions. Carefully developed teacher's guides, various types of self-learning materials, ITV programs and computer-assisted instructional program seem to offer great promise if the utilization of these aids is well linked with teacher education programs.

Another measure would be to devise an instructional and personnel management system which provides for differentiated staffing, involving the participation of a team of teachers and community people in planning and

conducting instruction.

In parallel, it would be worthwhile to arouse the awareness of the public of its responsibility for education, thus sustaining its interest in sharing educational roles with teachers. There are people who have a direct or indirect bearing on children's growth; namely, parents, community leaders, rural extension workers, etc. Their commitment to educational services should be strengthened until we can claim that our society has become a genuinely "teaching and learning society."

Thirdly, teacher education involves various phases, viz., recruitment, initial preparation, placement and inservice training. Problems arise when they are not effectively linked in the context of a total system. In particular, recruitment has received least attention, despite the important role it plays in raising the quality of teachers. The need is acute to develop a recruitment device that induces pupils with high potential into teacher training colleges. Since success in recruitment of teacher candidates of high potential is closely related to the incentive system for teaching profession, it is mandatory to devise imaginative incentive measures for the profession. To support this, resource in-puts should be increased substantially.

Fourthly, in order for teacher education to effect educational innovations, teacher training colleges should be closely linked with R & D organizations. Going one step forward, teacher educators should be made the core personnel in planning, implementing and evaluating educational innovations.

Fifthly, considering that education is the cornerstone of nation-building, teacher education which determines the quality of education should be given top priority in its bidding for a share of investment in education. Being a strategic point linked to all spheres of education, investment in this component will provide a large multiplier effect.

Section Four:

STRENGTHENING THE LINKS BETWEEN HIGHER EDUCATION AND THE BUSINESS COMMUNITY

Section Four deals with the interdependency of higher education and the corporate world and how a useful and appropriate relationship can be established. POSVAR's paper introduces the topic from the academic side and deals with linkages between higher education and business established in the U.S. KIM's paper, written from the corporation side, describes the extensive links that exist between Korean universities and corporations.

The University and the Business Corporation

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The occasion of this World Assembly brings together leading educatiors and leaders of business, and this has not only symbolic but substantial meaning. Universities and business corporations have ancient origins but they are very modern institutions. They stand at the forefront of industrial and intellectual progress.

My thesis is this: while they are different from one another, universities and business corporations are utterly interdependent; together they are key to finding solutions to the most fundamental problems of our future. This is true in the U.S. and in the world too, and will become more so through the dynamics of change of future world society.

To deal with this area in America there is a newly formed group of business and higher education, made up of heads of major corporations and universities. I shall say more about that later. National business associations are taking great interest in the welfare of universities, and most educators welcome this trend.

Let me make a curious observation about this subject. As an object of analysis and study, the relation of higher education and business has so far received scant attention. I requested from my library a computer search of journals on education dealing with this topic since 1975. The search covered 86,200 articles, and identified only three as slightly relevant to the topic.

As for the subject itself, its scope is vast. I shall only mention some differences (real and perceived), some similarities and point out some elements of our common cause. I must necessarily stress the U.S. experience, and hope that attention will be drawn to the subject in a wider sphere.

The large research university and the large business corporation in the U.S. are complex institutions that developed along with our nation, and did so at an accelerated rate in the last century. In the past 20 years there has appeared a breach of understanding between those who sit in the board rooms and those who inhabit the campuses. In part this has been fueled by student unrest.

Today the perceptions held by businessmen for the academy and by professors for executives in business are sometimes so distorted as to create the impression among many that an adversary relationship exists between two economic and social forces, and also that such antagonism is necessarily part of the advanced socio-economic system. This can be said of all the industrialized free enterprise countries, including the U.S. Western Europe,

Japan and now Korea.

The apparent differences between universities and business often is perceived as a gap of values between the youth of today encouraged by some of their professors and the people who make the economic system work. Also, opinion polls in the U.S. reveal that the average citizen has an amazing lack of understanding of the nature of capital investment and profit – that return on investment and massive capital formation are essential in any industrial country, including the Soviet Union and the People's Republic of China.

There is no question that there are inherent differences between the academic and the business sector. Free inquiry is utterly different from a production line. Ideas are not manufactured products. But we have in common a growing sense of urgency or crisis affected by balances of payments, fluctuating currencies, escalating inflation, energy dependency, as well as unsure productivity and capital investment for future economic growth. Higher education and business share these problems and share the responsibility for their solutions.

In elementary terms, we have similar tasks and functions. Academic administrators and industrial leaders are fellow executives of complex organizations. A university is a corporation that is or ought to be concerned with sound management, allocation of resources, the relationship of inputs to outputs, and the production of cost-effective benefits to society.

The administration of a university should be attentive to efficiency and should even bring special sophistication to its management through its academic expertise, its professional business training, and its advanced information and computer systems. It is my own duty to keep my university financially sound and I must ensure it a balanced budget, as well as being concerned with the value and quality of what it does. My university is the largest employer in the city of Pittsburgh. With hospitals, our expenditures are half a billion dollars. As Peter Drucker said,

> "No business today – in fact no business in American history – has a fraction of the power that today's big university has. By granting or denying admissions or the college degree, the university grants or denies access to jobs and livelihoods."

Although a university does not have stockholders, it must justify itself to the public and to its private and government sources of support. Also, business and higher education need to work together toward a more harmonious tripartite relationship with government. In the U.S., federal government regulation affecting education threatens to become excessive and federal reporting requirements are costly, (two million dollars per year for my university), redundant, and of little use. Industry suffers similarly. We all know the U.S. has no monopoly on big government bureaucracy, and there are examples in your own countries.

Higher education, and especially the research university, is an important creative sector of the national capital plant and contributes to increases in the gross national product through the generation of human resources and the impact of basic research. Of course the cultural and humanistic con-

tributions that it makes to society in the largest context are more fundamentally important than all things economic.

We train and educate virtually all of the managers, engineers, economists, and research investigators that will lead industry in the next generation. Human capital is a prime concern for the future; it has to come before the factories, machines, airports, railroads and highways. For that reason, developing countries around the world that aspire to build an economic infrastructure start with building higher education. To illustrate the value of human capital, the enhanced lifetime income of University of Pittsburgh graduates is estimated at 20 billion dollars, as correlated with the advanced education and training received. This resource will make the difference between major growth and prosperity versus economic decline for the region. The same human capital investment effect holds at the national level many times over.

Universities made a vital contribution through research and development. Combined expenditure on research and development in the United States in 1980 will be about 30 billion dollars, of which four billion dollars will be performed in the university environment, with half of that on basic research. Although the latter is a small share of the total, generally it is the most uninhibited and creative sector of research in the nation.

The 300 universities in the United States, including the 50 large, comprehensive, research-oriented universities that constitute the American Association of Universities (including the University of Pittsburgh) make an overall research contribution to our society and our future growth that is incalculably important. Their investigators work in areas often not covered by laboratories in industry and government. Many industrial laboratories must work within a limited time horizon, and return on investment must be a concern. The horizon may be no more than four or five years away; only the largest corporations and the government itself can afford to invest in possible results in ten or fifteen years, or beyond. Government laboratories, while unconcerned with profits, are comparatively monolithic and, therefore, oftentimes less flexible and creative. Universities, to the extent that they can marshall grant support, have researchers that can apply themselves with the fewest constraints and at the most advanced frontiers.

Therefore, at the basic research level, universities make a creative open-ended, and strategic contribution to the American economy. Research-type universities are an element of our system that have as yet no counterp in other societies; their research role is not replicated in Western Europe or Japan (although West Germany provides impressive support to basic research in universities and independent laboratories).

It is no coincidence that the relative decline in the economic fortunes of the U.S. has paralleled and followed a decline in the relative application of resources to research and development and particularly to research. The drop of national R & D expenditures as a part of GNP from 3% to 2.2% are to be contrasted with increases elsewhere. Since 1967, productivity rates have surged in Japan, increased moderately in Europe and increased only modestly in Canada, the United Kingdom and the U.S.

To face this challenge, a new partnership of American business and higher education is beginning to work. Universities have suffered especially in the struggle for research funding; this is why we have fought hard for a turn-around in the downward trend and why industrial leaders and educators have urged the U.S. government to increase the basic research budget of the U.S.

I want to conclude by stressing the university-business partnership in action. I am pleased to make the observation that the schools of the University of Pittsburgh, such as Education and Business, are a manifestation of what I mean about bringing business and higher education together. Besides its regular Master of Business Administration and Ph. D. programs, our Graduate School of Business has added challenging management programs for executives. The school is linked intimately with 98 corporations in Pittsburgh through its "associates" program, and has frequent contact and exchanges with them. Other universities make similar efforts.

But on the larger front, what should we do next? First, we must meet and discuss our problems together more frequently and more seriously. The American Council on Education established the Business and Higher Education Forum consisting of chief executives from about twenty large corporations and about twenty universities. I am a charter member of that new effort, which includes Westinghouse, Rockwell, Mobil, General Motors, Harvard, Notre Dame, Michigan and others of similar stature.

Among the possible actions we contemplate are these:

- a study on ways basic research can be encouraged in industry, applied research can be stimulated in universities, and cooperation can be encouraged between researchers in industry and universities;
- a mechanism for business and higher education leaders to work together to make policy recommendations to the U.S. President on ways research and development can enhance the productivity rate;
- a study of R & D conditions that stimulate or constrain discovery and use of research and technology;
- a project to encourage university research on ways to improve manufacturing, such as research on micro-processing and mining technology;
- a project to encourage energy policy research including nuclear waste disposal and promising options for energy production;
- a project to encourage entrepreneurship, communication, and creativity skills among students who are also future corporate employees.

Higher education needs to become more sophisticated and reactive to the manpower needs of industry, and of course I would argue that industry in turn ought to be more sympathetic and supportive of the funding needs of higher education. Also, it is of critical importance for business leaders to remain sensitive to the values of academic freedom and intellectual autonomy on the campus. We must strengthen our alliance in advancing the cause of expanded research and development as a national investment. We need new tax incentives to help each other, new centers of cooperation and new kinds of joint ventures, not only in research and development but also in training and education.

We must form a vigorous combination of these forces. Without their cooperation, however, it is my fear – shared by others – that solutions reached independently many not amount to very much.

The point was well stated by Alfred Sloan, Chairman of General Motors, a generation ago.

> "When the annals of our time are recorded, it will most likely be found that the two greatest contributions of our time have been the U.S. university and the U.S. corporation: both mightly forces, both uniquely American. If these two forces can go forward together in understanding and cooperation, there is perhaps no problem beyond their joint power for resolution. If, however, they choose to go their separate ways, there is no solution of any problem affecting either that is likely to be long lasting."

I submit that this proposition now applies in new force and on an international scale and should be at the heart of the future concerns of the leading educators and businessmen gathered annually at World Assemblies of the International Council on Education for Teaching.

The Business Community and Higher Education in Korea

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Korea's Rapid Industrial Growth

The cooperation between the business community and higher education in Korea can only be understood in the context of the country's tremendous development during the past twenty years. Twenty years ago, national economic growth was insignificant. Yet in fifteen years per capita income has jumped from $83 to $1,500, propelled by an average growth rate of 10% per year. Fifteen years ago the country's net growth was approximately $55 million; today it is $15.5 billion. Although there are many reasons for this growth, one concerns the unusual degree of cooperation that has existed between the business community and government. This is analagous to what took place in the U.S. during World War II. President Roosevelt asked the business community to build 60,000 planes per year, a goal that was considered impossible by many. But through close cooperation between government and industries the goal was achieved. In Korea fifteen years ago when annual per capita income was $83, planners set a target of $1,000 per capita income by 1981. At that time, this ambitious target was laughed at. But with a national commitment and drive combined with a consensus on how to go about achieving it among government, academic and business, this target was not only achieved earlier than planned but exceeded. This is in contrast to the history of other development plans elsewhere where delays are the rule rather than the exception.

Need for High Level Manpower

At an earlier stage of development, the import substitution stage, the Korean economy did not require large numbers of highly trained persons. At this stage, machinery, and goods were imported from overseas. Since there was no need for highly skilled persons who could build machinery, general education was sufficient. The second stage of economic development in the 1960's involved the creation of light industries in Korea. Still, there was no need for persons able to create and manage a high technology. But today, many Korean industries are operating at the high technology level, for example in the heavy chemical industry. Korea is now producing

ships including large container ships and an entire range of automobiles. We are even exporting our plants in such areas as textile, tire, cement, chemicals etc. Korea is well-known for construction. My company has sold milling machines to the U.S. and orders are increasing. This is Korea today.

In order to provide the high level manpower for such an industrial complex, it is obvious that business increasingly turned to higher education. The higher education system, as might be expected, was unprepared to meet the needs of industry. Complaints directed to higher education institutions were heard from the business community. Universities were insufficiently responsive to the manpower needs of business. It was said that graduates did not have the skills and knowledge applicable to industrial needs. Even though a foreign language is taught sometimes for ten years or more, graduates cannot communicate with foreigners because the curriculum does not teach speaking but literature. It was said that graduates are egocentric with little regard for the nation's heritage and goals. Universities were sometimes referred to as diploma mills without regard for quality.

Complaints arose because of the practical need for large numbers of highly trained persons able to continue Korea's rapid development. For example, at present Korea has approximately one million skilled workers. Four times this number will be needed fifteen years from now. Today we have about 200,000 engineers in all categories. By the year 1990 it is estimated that we will need one million.

Higher education in Korea has responded to these new needs for high level manpower and is continuing to do so.

Universities have become much more aware of the manpower needs of industry and many have geared their programs accordingly. Quality in instruction has been raised. Honor programs have been instituted providing for the accelerated graduation of bright students. The number of required credits for graduation has been dropped form 160 to 140 with more weight placed on research.

On the business side we have seen a growing tendency to participate in the field of higher education to assist in making it more responsive to high level manpower needs of our industrializing society.

One of the most interesting examples is the establishment of educational foundations within industries to promote activities designed to develop the high level skills needed by business and industry. There is a growing tendency for large industries to establish higher learning institutes within these foundations, particularly in the field of engineering. Other industries, through their foundations, have taken over ill managed educational institutions and have used them to retrain graduates through on-the-job training, thus making their learning applicable to new job situations.

The organization of the foundation is important. For example, in the foundation which we established, I am not a director nor is my brother who was actually the founder of the corporation whose assets are valued at $3 billion. We are simply designated by the Board as persons able to manage the foundation on the theory that those who make money do not necessarily know how best to use it. We let the foundation explore ways of using the

money effectively by cooperation with those who need it.

Another example of university-industry cooperation is the "sister relationship". For example, our company has a sister relationship with a number of engineering colleges which we are supporting through providing facilities and materials as well a scholarship fund for able students.

We are a contributor to the Korean Traders Scholarship Fund which provides scholarships to students in a wide variety of fields.

A Science Foundation has been founded by the Government but the most important feature is that the Board of Trustees is composed not only of government officials but of the representatives of major private corporations.

A regular communications channel has been established between the Ministry of Education and the business community whereby the educational authorities obtain feedback from the employers of university graduates about their performance.

A so-called "cooperative program" has been established which provides opportunities for students to get industrial experience during summer vacations. This program has advanced so successfully that it is now highly regarded as a means of integrating theory and practice during the university program.

We are now planning to establish research institutes. The cooperation between the business community and research institutions is just beginning to take place in Korea. We still have a long way to go to reach the level of cooperation that exists between American Universities and the U.S. government.

Conclusion

The use of specific Korean examples on how business has cooperated with the field of higher education is based on the assumption that they may be relevant to other developing countries. Although our experience is not directly applicable to other countries, I hope that others may draw some important lessons and learn from our experience.

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